



United States
Department of
Agriculture

In cooperation with the
Illinois Agricultural
Experiment Station



NRCS

Natural
Resources
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Service

Soil Survey of Stephenson County, Illinois



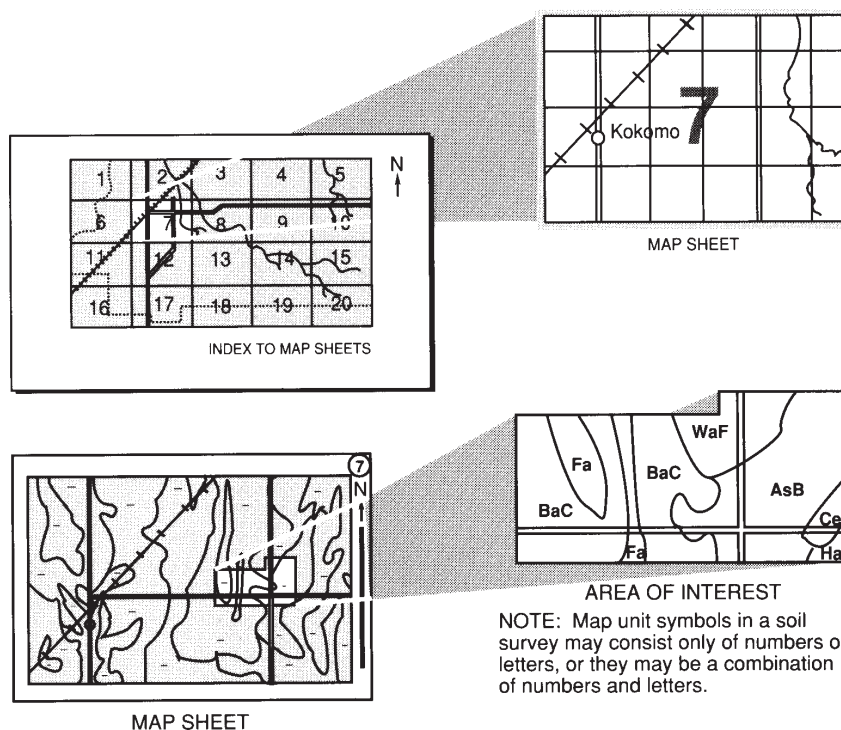
How To Use This Soil Survey

This publication consists of a manuscript and a set of soil maps. The information provided can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**. Note the number of the map sheet and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described.

The **Contents** shows which table has data on a specific land use for each detailed soil map unit. Also see the **Contents** for sections of this publication that may address your specific needs.



National Cooperative Soil Survey

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (formerly the Soil Conservation Service) has leadership for the Federal part of the National Cooperative Soil Survey. This survey was made cooperatively by the Natural Resources Conservation Service and the Illinois Agricultural Experiment Station. It is part of the technical assistance furnished to the Stephenson County Soil and Water Conservation District. Financial assistance was provided by the Stephenson County Board and the Illinois Department of Agriculture.

Major fieldwork for this soil survey was completed in 2005. Soil names and descriptions were approved in 2006. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2006. The most current official data are available on the Internet.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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Cover Photo Caption

Stripcropping is used to reduce the hazard of erosion in many areas.

Additional information about the Nation's natural resources is available online from the Natural Resources Conservation Service at <http://www.nrcs.usda.gov>.

Contents

How To Use This Soil Survey	i
Numerical Index to Map Units	ix
Foreword	xiii
General Nature of the Survey Area	1
Climate	3
Physiography and Drainage	3
History	4
Farming and Industry	5
Parks and Recreation	5
How This Survey Was Made	5
Formation and Classification of the Soils	7
Formation of the Soils	7
Parent Material and Geology	7
Living Organisms	9
Climate	9
Topography	9
Time	10
Classification of the Soils	10
Soil Series and Detailed Soil Map Units	13
<i>Appleriver Series</i>	14
732B—Appleriver silt loam, 2 to 5 percent slopes	16
732C—Appleriver silt loam, 5 to 10 percent slopes	16
<i>Argyle Series</i>	17
227B—Argyle silt loam, 2 to 5 percent slopes	18
227C2—Argyle silt loam, 5 to 10 percent slopes, eroded	19
<i>Ashdale Series</i>	20
411B—Ashdale silt loam, 2 to 5 percent slopes	21
411C2—Ashdale silt loam, 5 to 10 percent slopes, eroded	22
<i>Assumption Series</i>	23
259C2—Assumption silt loam, 5 to 10 percent slopes, eroded	24
<i>Atterberry Series</i>	25
61A—Atterberry silt loam, 0 to 2 percent slopes	27
61B—Atterberry silt loam, 2 to 5 percent slopes	28
<i>Batavia Series</i>	28
105A—Batavia silt loam, 0 to 2 percent slopes	30
105B—Batavia silt loam, 2 to 5 percent slopes	31
105C—Batavia silt loam, 5 to 10 percent slopes	32
<i>Beaucoup Series</i>	32
8070A—Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	34
<i>Beavercreek Series</i>	34
8579A—Beavercreek silt loam, 0 to 2 percent slopes, occasionally flooded	36
<i>Birkbeck Series</i>	37
233B—Birkbeck silt loam, 2 to 5 percent slopes	38
233C2—Birkbeck silt loam, 5 to 10 percent slopes, eroded	39
233D2—Birkbeck silt loam, 10 to 18 percent slopes, eroded	40

<i>Camden Series</i>	40
134B—Camden silt loam, 2 to 5 percent slopes	42
134C2—Camden silt loam, 5 to 10 percent slopes, eroded	43
134C3—Camden silty clay loam, 5 to 10 percent slopes, severely eroded	44
134D2—Camden silt loam, 10 to 18 percent slopes, eroded	44
<i>Casco Series</i>	45
735C2—Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded	46
735D2—Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded	48
735E2—Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded	49
<i>Derinda Series</i>	51
417C2—Derinda silt loam, 5 to 10 percent slopes, eroded	52
417C3—Derinda silty clay loam, 5 to 10 percent slopes, severely eroded	53
417D2—Derinda silt loam, 10 to 18 percent slopes, eroded	54
<i>Dickinson Series</i>	54
87B—Dickinson sandy loam, 2 to 5 percent slopes	56
87C2—Dickinson sandy loam, 5 to 10 percent slopes, eroded	57
<i>Dodgeville Series</i>	58
40C2—Dodgeville silt loam, 5 to 10 percent slopes, eroded	59
40D2—Dodgeville silt loam, 10 to 18 percent slopes, eroded	60
<i>Dorchester Series</i>	61
8239A—Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded	62
<i>Drummer Series</i>	63
152A—Drummer silty clay loam, 0 to 2 percent slopes	64
<i>Dubuque Series</i>	65
29C2—Dubuque silt loam, 5 to 10 percent slopes, eroded	66
29D2—Dubuque silt loam, 10 to 18 percent slopes, eroded	67
<i>Durand Series</i>	68
416B—Durand silt loam, 2 to 5 percent slopes	69
416C2—Durand silt loam, 5 to 10 percent slopes, eroded	70
<i>Edgington Series</i>	71
272A—Edgington silt loam, 0 to 2 percent slopes	72
<i>Elburn Series</i>	73
198A—Elburn silt loam, 0 to 2 percent slopes	75
198B—Elburn silt loam, 2 to 5 percent slopes	75
<i>Elco Series</i>	76
119C2—Elco silt loam, 5 to 10 percent slopes, eroded	78
<i>Eleroy Series</i>	79
547B—Eleroy silt loam, 2 to 5 percent slopes	80
547C2—Eleroy silt loam, 5 to 10 percent slopes, eroded	81
<i>Elizabeth Series</i>	82
403D2—Elizabeth silt loam, 10 to 18 percent slopes, eroded	82
403F2—Elizabeth silt loam, 18 to 35 percent slopes, eroded	83
<i>Fayette Series</i>	84
280B—Fayette silt loam, 2 to 5 percent slopes	85
280C2—Fayette silt loam, 5 to 10 percent slopes, eroded	86
280C3—Fayette silty clay loam, 5 to 10 percent slopes, severely eroded	87
280D2—Fayette silt loam, 10 to 18 percent slopes, eroded	88
<i>Flagg Series</i>	89
419B—Flagg silt loam, 2 to 5 percent slopes	90
419C2—Flagg silt loam, 5 to 10 percent slopes, eroded	91
<i>Fox Series</i>	92
735C2—Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded	93
735D2—Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded	95
735E2—Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded	96

<i>Greenbush Series</i>	98
675A—Greenbush silt loam, 0 to 2 percent slopes	99
675B—Greenbush silt loam, 2 to 5 percent slopes	100
675C—Greenbush silt loam, 5 to 10 percent slopes	101
675C2—Greenbush silt loam, 5 to 10 percent slopes, eroded	102
<i>Griswold Series</i>	102
363D2—Griswold loam, 6 to 12 percent slopes, eroded	104
<i>Harpster Series</i>	104
67A—Harpster silty clay loam, 0 to 2 percent slopes	105
<i>Harvard Series</i>	106
344A—Harvard silt loam, 0 to 2 percent slopes	108
344B—Harvard silt loam, 2 to 5 percent slopes	108
344C2—Harvard silt loam, 5 to 10 percent slopes, eroded	109
<i>Hitt Series</i>	110
506B—Hitt silt loam, 2 to 5 percent slopes	111
506C2—Hitt silt loam, 5 to 10 percent slopes, eroded	112
<i>Houghton Series</i>	113
8103A—Houghton muck, 0 to 2 percent slopes, occasionally flooded	114
<i>Huntsville Series</i>	115
8077A—Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	116
<i>Keltner Series</i>	117
546B—Keltner silt loam, 2 to 5 percent slopes	118
546C2—Keltner silt loam, 5 to 10 percent slopes, eroded	119
<i>Kendall Series</i>	120
242A—Kendall silt loam, 0 to 2 percent slopes	122
242B—Kendall silt loam, 2 to 5 percent slopes	122
<i>Kidder Series</i>	123
361D3—Kidder clay loam, 6 to 12 percent slopes, severely eroded	124
361E2—Kidder loam, 12 to 18 percent slopes, eroded	125
<i>Lamoille Series</i>	126
905F—NewGlarus-Lamoille silt loams, 18 to 35 percent slopes	127
<i>Lawson Series</i>	128
3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded	129
8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	130
<i>Lena Series</i>	131
8210A—Lena muck, 0 to 2 percent slopes, occasionally flooded	132
<i>Loran Series</i>	133
572B—Loran silt loam, 2 to 5 percent slopes	134
572C—Loran silt loam, 5 to 10 percent slopes	135
<i>Massbach Series</i>	136
753B—Massbach silt loam, 2 to 5 percent slopes	138
753C2—Massbach silt loam, 5 to 10 percent slopes, eroded	139
<i>Millbrook Series</i>	139
219A—Millbrook silt loam, 0 to 2 percent slopes	141
<i>Millington Series</i>	142
8082A—Millington silt loam, 0 to 2 percent slopes, occasionally flooded	143
M-W—Miscellaneous water	144
<i>Muscatune Series</i>	144
51A—Muscatune silt loam, 0 to 2 percent slopes	146
51B—Muscatune silt loam, 2 to 5 percent slopes	147
<i>Myrtle Series</i>	148
414B—Myrtle silt loam, 2 to 5 percent slopes	149
414C—Myrtle silt loam, 5 to 10 percent slopes	150
414C2—Myrtle silt loam, 5 to 10 percent slopes, eroded	150

<i>Nasset Series</i>	151
731B—Nasset silt loam, 2 to 5 percent slopes	153
731C2—Nasset silt loam, 5 to 10 percent slopes, eroded	153
<i>NewGlarus Series</i>	154
905F—NewGlarus-Lamoille silt loams, 18 to 35 percent slopes	156
928D2—NewGlarus-Palsgrove silt loams, 10 to 18 percent slopes, eroded	157
<i>Octagon Series</i>	158
656C2—Octagon silt loam, 4 to 6 percent slopes, eroded	159
656D2—Octagon silt loam, 6 to 12 percent slopes, eroded	160
<i>Ogle Series</i>	161
412B—Ogle silt loam, 2 to 5 percent slopes	162
412C2—Ogle silt loam, 5 to 10 percent slopes, eroded	163
<i>Oneco Series</i>	164
752C2—Oneco silt loam, 5 to 10 percent slopes, eroded	165
<i>Orion Series</i>	167
8415A—Orion silt loam, 0 to 2 percent slopes, occasionally flooded	168
802B—Orthents, loamy, undulating	169
<i>Osco Series</i>	169
86A—Osco silt loam, 0 to 2 percent slopes	172
86B—Osco silt loam, 2 to 5 percent slopes	172
86C—Osco silt loam, 5 to 10 percent slopes	173
86C2—Osco silt loam, 5 to 10 percent slopes, eroded	174
<i>Otter Series</i>	175
8076A—Otter silt loam, 0 to 2 percent slopes, occasionally flooded	176
<i>Palsgrove Series</i>	177
429B—Palsgrove silt loam, 2 to 5 percent slopes	178
429C2—Palsgrove silt loam, 5 to 10 percent slopes, eroded	179
429D2—Palsgrove silt loam, 10 to 18 percent slopes, eroded	180
928D2—NewGlarus-Palsgrove silt loams, 10 to 18 percent slopes, eroded	181
<i>Parkway Series</i>	182
686B—Parkway silt loam, 2 to 5 percent slopes	184
686C2—Parkway silt loam, 5 to 10 percent slopes, eroded	185
<i>Pecatonica Series</i>	186
21B—Pecatonica silt loam, 2 to 5 percent slopes	187
21C2—Pecatonica silt loam, 5 to 10 percent slopes, eroded	188
864—Pits, quarries	189
865—Pits, gravel	189
<i>Plano Series</i>	189
199A—Plano silt loam, 0 to 2 percent slopes	191
199B—Plano silt loam, 2 to 5 percent slopes	191
199C2—Plano silt loam, 5 to 10 percent slopes, eroded	192
<i>Proctor Series</i>	193
148A—Proctor silt loam, 0 to 2 percent slopes	195
148B—Proctor silt loam, 2 to 5 percent slopes	195
148C2—Proctor silt loam, 5 to 10 percent slopes, eroded	196
<i>Radford Series</i>	197
3074A—Radford silt loam, 0 to 2 percent slopes, frequently flooded	198
8074A—Radford silt loam, 0 to 2 percent slopes, occasionally flooded	199
<i>Rodman Series</i>	200
735C2—Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded	201
735D2—Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded	202
735E2—Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded	204
<i>Rozetta Series</i>	205
279A—Rozetta silt loam, 0 to 2 percent slopes	206

279B—Rozetta silt loam, 2 to 5 percent slopes	207
<i>Sable Series</i>	208
68A—Sable silty clay loam, 0 to 2 percent slopes	209
<i>Sawmill Series</i>	210
1107A—Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded	212
3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	213
8107A—Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	214
<i>Schapville Series</i>	214
418C2—Schapville silt loam, 5 to 10 percent slopes, eroded	216
<i>Senachwine Series</i>	217
618C2—Senachwine silt loam, 5 to 10 percent slopes, eroded	218
618C3—Senachwine clay loam, 5 to 10 percent slopes, severely eroded	218
618D2—Senachwine silt loam, 10 to 18 percent slopes, eroded	219
<i>Shullsburg Series</i>	220
745B—Shullsburg silt loam, 2 to 5 percent slopes	221
745C2—Shullsburg silt loam, 5 to 10 percent slopes, eroded	222
<i>St. Charles Series</i>	223
243A—St. Charles silt loam, 0 to 2 percent slopes	225
243B—St. Charles silt loam, 2 to 5 percent slopes	225
243C2—St. Charles silt loam, 5 to 10 percent slopes, eroded	226
<i>Stronghurst Series</i>	227
278A—Stronghurst silt loam, 0 to 2 percent slopes	229
<i>Thorp Series</i>	229
206A—Thorp silt loam, 0 to 2 percent slopes	231
<i>Virgil Series</i>	232
104A—Virgil silt loam, 0 to 2 percent slopes	234
104B—Virgil silt loam, 2 to 5 percent slopes	235
<i>Warsaw Series</i>	235
290C2—Warsaw silt loam, 5 to 10 percent slopes, eroded	237
W—Water	238
<i>Westville Series</i>	238
22C2—Westville silt loam, 5 to 10 percent slopes, eroded	239
22C3—Westville clay loam, 5 to 10 percent slopes, severely eroded	240
22D2—Westville silt loam, 10 to 18 percent slopes, eroded	241
<i>Woodbine Series</i>	241
410B—Woodbine silt loam, 2 to 5 percent slopes	243
410C2—Woodbine silt loam, 5 to 10 percent slopes, eroded	244
410C3—Woodbine silty clay loam, 5 to 10 percent slopes, severely eroded	244
410D2—Woodbine silt loam, 10 to 18 percent slopes, eroded	245
<i>Wyanet Series</i>	246
622B—Wyanet silt loam, 2 to 5 percent slopes	247
622C2—Wyanet silt loam, 5 to 10 percent slopes, eroded	248
Use and Management of the Soils	251
Interpretive Ratings	251
Rating Class Terms	251
Numerical Ratings	252
Crops and Pasture	252
Limitations and Hazards Affecting Cropland and Pastureland	254
Yields per Acre	258
Land Capability Classification	259
Prime Farmland	260
Hydric Soils	260
Windbreaks and Environmental Plantings	263

Forestland Management and Productivity	263
Recreation	264
Wildlife Habitat	266
Engineering	267
Building Site Development	268
Sanitary Facilities	270
Construction Materials	272
Water Management	273
Soil Properties	277
Engineering Index Properties	277
Physical Properties	278
Chemical Properties	280
Water Features	281
Soil Features	282
References	285
Glossary	289
Tables	309
Table 1.—Temperature and Precipitation	310
Table 2.—Freeze Dates in Spring and Fall	311
Table 3.—Growing Season	311
Table 4.—Classification of the Soils	312
Table 5.—Acreage and Proportionate Extent of the Soils	314
Table 6.—Limitations and Hazards Affecting Cropland and Pastureland	317
Table 7.—Land Capability and Yields per Acre of Crops and Pasture	327
Table 8.—Prime Farmland	335
Table 9.—Hydric Soils	337
Table 10.—Windbreaks and Environmental Plantings	342
Table 11.—Forestland Management	382
Table 12.—Forestland Productivity	395
Table 13a.—Recreational Development	409
Table 13b.—Recreational Development	423
Table 14.—Wildlife Habitat	434
Table 15a.—Building Site Development	444
Table 15b.—Building Site Development	459
Table 16a.—Sanitary Facilities	477
Table 16b.—Sanitary Facilities	496
Table 17a.—Construction Materials	512
Table 17b.—Construction Materials	525
Table 18a.—Water Management	546
Table 18b.—Water Management	560
Table 18c.—Water Management	577
Table 19.—Engineering Index Properties	591
Table 20.—Physical Properties of the Soils	625
Table 21.—Chemical Properties of the Soils	645
Table 22.—Water Features	660
Table 23.—Soil Features	670

Numerical Index to Map Units

21B—Pecatonica silt loam, 2 to 5 percent slopes	187
21C2—Pecatonica silt loam, 5 to 10 percent slopes, eroded	188
22C2—Westville silt loam, 5 to 10 percent slopes, eroded	239
22C3—Westville clay loam, 5 to 10 percent slopes, severely eroded	240
22D2—Westville silt loam, 10 to 18 percent slopes, eroded	241
29C2—Dubuque silt loam, 5 to 10 percent slopes, eroded	66
29D2—Dubuque silt loam, 10 to 18 percent slopes, eroded	67
40C2—Dodgeville silt loam, 5 to 10 percent slopes, eroded	59
40D2—Dodgeville silt loam, 10 to 18 percent slopes, eroded	60
51A—Muscatune silt loam, 0 to 2 percent slopes	146
51B—Muscatune silt loam, 2 to 5 percent slopes	147
61A—Atterberry silt loam, 0 to 2 percent slopes	27
61B—Atterberry silt loam, 2 to 5 percent slopes	28
67A—Harpster silty clay loam, 0 to 2 percent slopes	105
68A—Sable silty clay loam, 0 to 2 percent slopes	209
86A—Osco silt loam, 0 to 2 percent slopes	172
86B—Osco silt loam, 2 to 5 percent slopes	172
86C—Osco silt loam, 5 to 10 percent slopes	173
86C2—Osco silt loam, 5 to 10 percent slopes, eroded	174
87B—Dickinson sandy loam, 2 to 5 percent slopes	56
87C2—Dickinson sandy loam, 5 to 10 percent slopes, eroded	57
104A—Virgil silt loam, 0 to 2 percent slopes	234
104B—Virgil silt loam, 2 to 5 percent slopes	235
105A—Batavia silt loam, 0 to 2 percent slopes	30
105B—Batavia silt loam, 2 to 5 percent slopes	31
105C—Batavia silt loam, 5 to 10 percent slopes	32
119C2—Elco silt loam, 5 to 10 percent slopes, eroded	78
134B—Camden silt loam, 2 to 5 percent slopes	42
134C2—Camden silt loam, 5 to 10 percent slopes, eroded	43
134C3—Camden silty clay loam, 5 to 10 percent slopes, severely eroded	44
134D2—Camden silt loam, 10 to 18 percent slopes, eroded	44
148A—Proctor silt loam, 0 to 2 percent slopes	195
148B—Proctor silt loam, 2 to 5 percent slopes	195
148C2—Proctor silt loam, 5 to 10 percent slopes, eroded	196
152A—Drummer silty clay loam, 0 to 2 percent slopes	64
198A—Elburn silt loam, 0 to 2 percent slopes	75
198B—Elburn silt loam, 2 to 5 percent slopes	75
199A—Plano silt loam, 0 to 2 percent slopes	191
199B—Plano silt loam, 2 to 5 percent slopes	191
199C2—Plano silt loam, 5 to 10 percent slopes, eroded	192
206A—Thorp silt loam, 0 to 2 percent slopes	231
219A—Millbrook silt loam, 0 to 2 percent slopes	141
227B—Argyle silt loam, 2 to 5 percent slopes	18
227C2—Argyle silt loam, 5 to 10 percent slopes, eroded	19
233B—Birkbeck silt loam, 2 to 5 percent slopes	38

233C2—Birkbeck silt loam, 5 to 10 percent slopes, eroded	39
233D2—Birkbeck silt loam, 10 to 18 percent slopes, eroded	40
242A—Kendall silt loam, 0 to 2 percent slopes	122
242B—Kendall silt loam, 2 to 5 percent slopes	122
243A—St. Charles silt loam, 0 to 2 percent slopes	225
243B—St. Charles silt loam, 2 to 5 percent slopes	225
243C2—St. Charles silt loam, 5 to 10 percent slopes, eroded	226
259C2—Assumption silt loam, 5 to 10 percent slopes, eroded	24
272A—Edgington silt loam, 0 to 2 percent slopes	72
278A—Stronghurst silt loam, 0 to 2 percent slopes	229
279A—Rozetta silt loam, 0 to 2 percent slopes	206
279B—Rozetta silt loam, 2 to 5 percent slopes	207
280B—Fayette silt loam, 2 to 5 percent slopes	85
280C2—Fayette silt loam, 5 to 10 percent slopes, eroded	86
280C3—Fayette silty clay loam, 5 to 10 percent slopes, severely eroded	87
280D2—Fayette silt loam, 10 to 18 percent slopes, eroded	88
290C2—Warsaw silt loam, 5 to 10 percent slopes, eroded	237
344A—Harvard silt loam, 0 to 2 percent slopes	108
344B—Harvard silt loam, 2 to 5 percent slopes	108
344C2—Harvard silt loam, 5 to 10 percent slopes, eroded	109
361D3—Kidder clay loam, 6 to 12 percent slopes, severely eroded	124
361E2—Kidder loam, 12 to 18 percent slopes, eroded	125
363D2—Griswold loam, 6 to 12 percent slopes, eroded	104
403D2—Elizabeth silt loam, 10 to 18 percent slopes, eroded	82
403F2—Elizabeth silt loam, 18 to 35 percent slopes, eroded	83
410B—Woodbine silt loam, 2 to 5 percent slopes	243
410C2—Woodbine silt loam, 5 to 10 percent slopes, eroded	244
410C3—Woodbine silty clay loam, 5 to 10 percent slopes, severely eroded	244
410D2—Woodbine silt loam, 10 to 18 percent slopes, eroded	245
411B—Ashdale silt loam, 2 to 5 percent slopes	21
411C2—Ashdale silt loam, 5 to 10 percent slopes, eroded	22
412B—Ogle silt loam, 2 to 5 percent slopes	162
412C2—Ogle silt loam, 5 to 10 percent slopes, eroded	163
414B—Myrtle silt loam, 2 to 5 percent slopes	149
414C—Myrtle silt loam, 5 to 10 percent slopes	150
414C2—Myrtle silt loam, 5 to 10 percent slopes, eroded	150
416B—Durand silt loam, 2 to 5 percent slopes	69
416C2—Durand silt loam, 5 to 10 percent slopes, eroded	70
417C2—Derinda silt loam, 5 to 10 percent slopes, eroded	52
417C3—Derinda silty clay loam, 5 to 10 percent slopes, severely eroded	53
417D2—Derinda silt loam, 10 to 18 percent slopes, eroded	54
418C2—Schapville silt loam, 5 to 10 percent slopes, eroded	216
419B—Flagg silt loam, 2 to 5 percent slopes	90
419C2—Flagg silt loam, 5 to 10 percent slopes, eroded	91
429B—Palsgrove silt loam, 2 to 5 percent slopes	178
429C2—Palsgrove silt loam, 5 to 10 percent slopes, eroded	179
429D2—Palsgrove silt loam, 10 to 18 percent slopes, eroded	180
506B—Hitt silt loam, 2 to 5 percent slopes	111
506C2—Hitt silt loam, 5 to 10 percent slopes, eroded	112
546B—Keltner silt loam, 2 to 5 percent slopes	118
546C2—Keltner silt loam, 5 to 10 percent slopes, eroded	119
547B—Eleroy silt loam, 2 to 5 percent slopes	80
547C2—Eleroy silt loam, 5 to 10 percent slopes, eroded	81
572B—Loran silt loam, 2 to 5 percent slopes	134

572C—Loran silt loam, 5 to 10 percent slopes	135
618C2—Senachwine silt loam, 5 to 10 percent slopes, eroded	218
618C3—Senachwine clay loam, 5 to 10 percent slopes, severely eroded	218
618D2—Senachwine silt loam, 10 to 18 percent slopes, eroded	219
622B—Wyanet silt loam, 2 to 5 percent slopes	247
622C2—Wyanet silt loam, 5 to 10 percent slopes, eroded	248
656C2—Octagon silt loam, 4 to 6 percent slopes, eroded	159
656D2—Octagon silt loam, 6 to 12 percent slopes, eroded	160
675A—Greenbush silt loam, 0 to 2 percent slopes	99
675B—Greenbush silt loam, 2 to 5 percent slopes	100
675C—Greenbush silt loam, 5 to 10 percent slopes	101
675C2—Greenbush silt loam, 5 to 10 percent slopes, eroded	102
686B—Parkway silt loam, 2 to 5 percent slopes	184
686C2—Parkway silt loam, 5 to 10 percent slopes, eroded	185
731B—Nasset silt loam, 2 to 5 percent slopes	153
731C2—Nasset silt loam, 5 to 10 percent slopes, eroded	153
732B—Appleriver silt loam, 2 to 5 percent slopes	16
732C—Appleriver silt loam, 5 to 10 percent slopes	16
735C2—Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded	46
735D2—Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded	48
735E2—Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded	49
745B—Shullsburg silt loam, 2 to 5 percent slopes	221
745C2—Shullsburg silt loam, 5 to 10 percent slopes, eroded	222
752C2—Oneco silt loam, 5 to 10 percent slopes, eroded	165
753B—Massbach silt loam, 2 to 5 percent slopes	138
753C2—Massbach silt loam, 5 to 10 percent slopes, eroded	139
802B—Orthents, loamy, undulating	169
864—Pits, quarries	189
865—Pits, gravel	189
905F—NewGlarus-Lamoille silt loams, 18 to 35 percent slopes	127, 156
928D2—NewGlarus-Palsgrove silt loams, 10 to 18 percent slopes, eroded	157, 181
1107A—Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded	212
3074A—Radford silt loam, 0 to 2 percent slopes, frequently flooded	198
3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	213
3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded	129
8070A—Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	34
8074A—Radford silt loam, 0 to 2 percent slopes, occasionally flooded	198
8076A—Otter silt loam, 0 to 2 percent slopes, occasionally flooded	176
8077A—Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	116
8082A—Millington silt loam, 0 to 2 percent slopes, occasionally flooded	143
8103A—Houghton muck, 0 to 2 percent slopes, occasionally flooded	114
8107A—Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	214
8210A—Lena muck, 0 to 2 percent slopes, occasionally flooded	132
8239A—Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded	62
8415A—Orion silt loam, 0 to 2 percent slopes, occasionally flooded	168
8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	130
8579A—Beaver creek silt loam, 0 to 2 percent slopes, occasionally flooded	36
M-W—Miscellaneous water	144
W—Water	238

Foreword

Soil surveys contain information that affects land use planning in survey areas. They include predictions of soil behavior for selected land uses. The surveys highlight soil limitations, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

Soil surveys are designed for many different users. Farmers, foresters, and agronomists can use the surveys to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the surveys to plan land use, select sites for construction, and identify special practices needed to ensure proper performance. Conservationists, teachers, students, and specialists in recreation, wildlife management, waste disposal, and pollution control can use the surveys to help them understand, protect, and enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. The information in this report is intended to identify soil properties that are used in making various land use or land treatment decisions. Statements made in this report are intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

These and many other soil properties that affect land use are described in this soil survey. The location of each map unit is shown on the detailed soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William J. Gradle
State Conservationist
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Soil Survey of Stephenson County, Illinois

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United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the Illinois Agricultural Experiment Station

STEPHENSON COUNTY is in northwestern Illinois (fig. 1). The county extends approximately 20 miles from north to south and 25 miles from east to west. It is bounded on the west by Jo Daviess County, on the north by the State of Wisconsin, on the east by Winnebago County, and on the south by Carroll and Ogle Counties. Stephenson County includes 18 townships that make up 567 square miles, or 361,390 acres. Freeport is the county seat. In 2002, the population of the county was 48,151 (U.S. Department of Commerce, 2002).

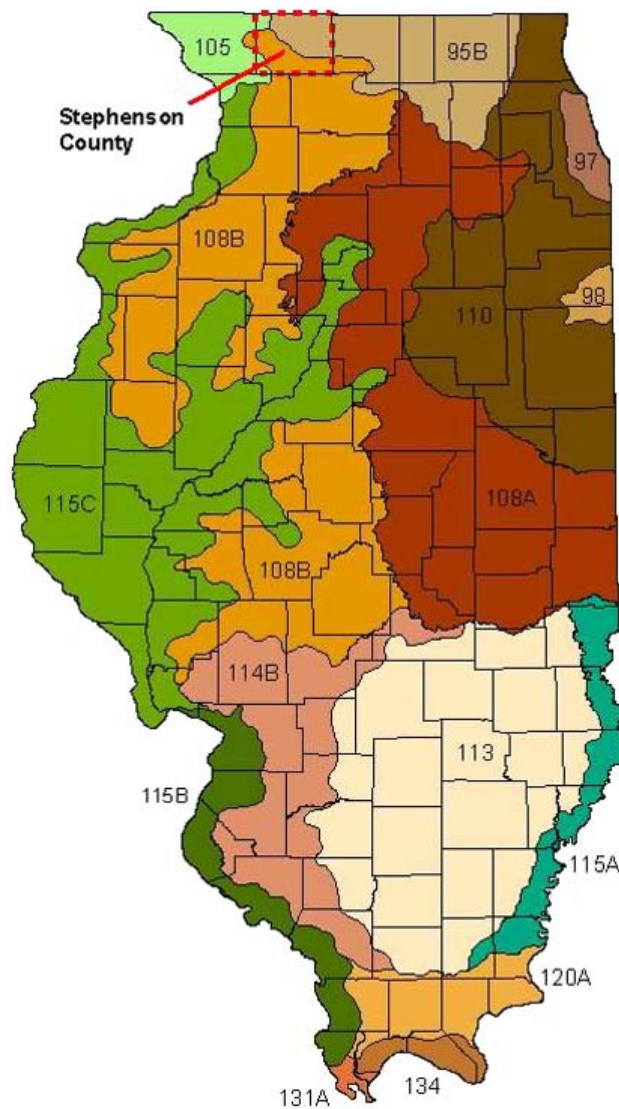
The survey area is a subset of Major Land Resource Areas (MLRAs) 95B, Southern Wisconsin and Northern Illinois Drift Plain; 105, Northern Mississippi Valley Loess Hills; and 108B, Illinois and Iowa Deep Loess and Drift (USDA/NRCS, 2006).

This soil survey updates the survey of Stephenson County published in 1976 (Ray and others, 1976). It provides additional information and has larger maps, which show the soils in greater detail. Some of the information from the 1976 survey has been incorporated in this publication with little alteration.

The information in this survey is also available as part of an interactive CD with GIS functionality and on the NRCS Web Soil Survey (<http://soils.usda.gov>).

General Nature of the Survey Area

This section provides general information about Stephenson County. It describes climate, physiography and drainage, history, farming and industry, and parks and recreation.



LEGEND

- 95B—Southern Wisconsin and Northern Illinois Drift Plain
- 97—Southwestern Michigan Fruit and Truck Crop Belt
- 98—Southern Michigan and Northern Indiana Drift Plain
- 105—Northern Mississippi Valley Loess Hills
- 108A and 108B—Illinois and Iowa Deep Loess and Drift
- 110—Northern Illinois and Indiana Heavy Till Plain
- 113—Central Claypan Areas
- 114B—Southern Illinois and Indiana Thin Loess and Till Plain, Western Part
- 115A, 115B, and 115C—Central Mississippi Valley Wooded Slopes
- 120A—Kentucky and Indiana Sandstone and Shale Hills and Valleys, Southern Part
- 131A—Southern Mississippi River Alluvium
- 134—Southern Mississippi Valley Loess

Figure 1.—Location of Stephenson County and the major land resource areas (MLRAs) in Illinois.

Climate

Stephenson County is cold in winter. In summer it generally is hot but has occasional cool spells. Precipitation falls as snow during frequent snowstorms in winter and chiefly as rain showers, which often are heavy, during the warmer periods, when warm, moist air moves in from the south. The amount of annual rainfall usually is adequate for corn, soybeans, and small grain crops.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Freeport, Illinois, in the period 1971 to 2000. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on the length of the growing season.

In winter, the average temperature is 21.5 degrees and the average daily minimum temperature is about 13 degrees F. In summer, the average temperature is about 70 degrees and the average daily maximum temperature is about 81 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The average annual total annual precipitation is 34.79 inches. Of this total, 23 inches, or about 66 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 12.3 inches. Thunderstorms occur on about 40 days each year.

The average seasonal snowfall is 32.2 inches. On the average, 54 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

Tornadoes and severe thunderstorms strike occasionally. They are of local extent and short duration, and they cause only sparse damage in narrow belts. Hailstorms sometimes occur during the warmer periods in scattered small areas.

Physiography and Drainage

Stephenson County is entirely within the Rock River Hill Country of the Till Plains Section of the Central Lowland Province (Leighton and others, 1948).

The county was glaciated, but drift is thin in many areas and the major uplands and valleys are controlled mainly by the bedrock surface. This area consists of rolling hills considered to be in the stage of late youth to early maturity.

A rather prominent feature in the southwest corner of the county, south of Kent and Pearl City, is the Silurian escarpment (Willman, 1973), which rises above and south of the Yellow Creek Valley and marks the boundary between younger Ordovician and Silurian bedrock to the southwest and older Ordovician bedrock to the north and east.

Another prominent feature is the mound just east of Waddams Grove in the northwestern part of the county. This mound stands about 160 feet above the level of much of the surrounding upland. It is considered an erosional remnant of Ordovician deposits younger than the surrounding area and has a cap of Silurian-age dolomite (Willman, 1973). The highest point in Stephenson County is the crest of this mound at an elevation of approximately 1,160 feet above sea level. The lowest elevation, approximately 690 feet above sea level, occurs where the East Plum River leaves the county about three-fourths of a mile east of the southwest corner of the county (fig. 2).

Major drainage in Stephenson County is generally to the south and east by the Pecatonica River and its numerous tributaries. The Pecatonica River flows eastward

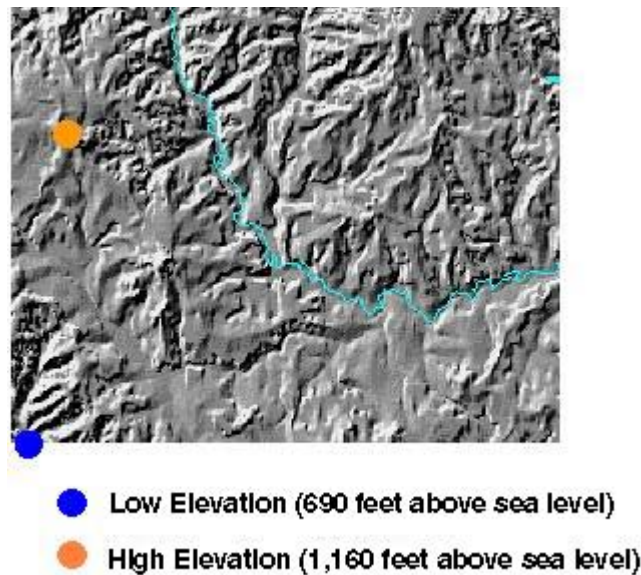


Figure 2.—Physiographic map showing the high and low points in Stephenson County. (Source: Illinois State Geological Survey, <http://www.isgs.uiuc.edu/education/hi-low/hilow-intro.shtml>)

into Winnebago County, leaving Stephenson County a little south of the midpoint of the eastern county boundary. East of Stephenson County, the Pecatonica River joins the Rock River, which discharges eventually into the Mississippi River southwest of Stephenson County.

The southwest corner of the county forms the headwaters of the East Plum River, which drains southwestward to the Mississippi River. A few sections along the southern border in the southeastern part of the county, near German Valley, drain southeastward into the Leaf River, which then joins the Rock River (Ray and others, 1976).

History

Stephenson County was established by law on March 4, 1837, from lands that had been part of Jo Daviess County (since 1827) and Winnebago County (since 1836). The county was named for Colonel Benjamin Stephenson, who had been a prominent pioneer, a colonel in the territorial militia, and Adjutant General of the Illinois Territory in 1813 and 1814.

Early trails across Stephenson County were the result of people trading furs with the Native Americans and traveling to the lead-mining areas in Jo Daviess County and southwestern Wisconsin. Many of the early settlers were miners and former soldiers. The last encounter of the Blackhawk War on Illinois soil was the Battle of Kellogg's Grove on June 25, 1832, in southwestern Stephenson County (Barrett, 1970).

Although settlers had stayed in the county previously for short periods, the first permanent settler is considered to be William Waddams, who built his home near the present site of Waddams Grove in 1833 (Fulwider, 1910). In 1834, many new settlers came to the area from Pennsylvania, Ohio, New York, Maryland, Virginia, the Carolinas, Kentucky, and Tennessee. Eventually, settlers came to Stephenson County directly from Europe.

When the county was established in 1837, Freeport became the county seat. Until 1836, this settlement had been called Winneshiek, after a chief of the Winnebago tribe who had established a village at the site. One of the famous Lincoln-Douglas debates was held in Freeport on August 27, 1858 (Ray and others, 1976).

Farming and Industry

Agriculture is a major industry in Stephenson County. In 2002, the county had 1,075 farms that made up 324,118 acres. The average farm size was 300 acres. Corn, soybeans, and hay are the major crops. In 2004, about 150,000 acres was used for corn, 82,000 acres was used for soybeans, 5,000 acres was used for wheat, and 2,500 acres was used for oats (Illinois Agricultural Statistics Service, 2005).

Hogs, beef and dairy cattle, and sheep are important animal industries. In 2005, there were about 88,000 hogs and pigs, 61,000 cattle and calves, 6,000 beef cows, and 2,100 sheep (Illinois Agricultural Statistics Service, 2005).

Industry is best developed in Freeport, but many smaller towns have some industry. These industries have included food manufacturing and processing (including milk and milk products), lumber and wood products, furniture and fixtures, chemicals, rubber and plastic products, primary metal industries, fabricated metal industries, machinery, electrical equipment and supplies, printing and publishing, stone and glass products, and agricultural services (Ray and others, 1976).

Parks and Recreation

Although Stephenson County is predominantly agricultural, the variety of natural resources makes it ideal for parks and for recreational pursuits. The Pecatonica River, which extends the entire length of the county, a State park, Lake Le-Aqua-Na, and the Jane Addams Bike Trail are major recreational features in the area. In addition to the State park, there are numerous church camps and private campgrounds accessible to the public. Public recreational enterprises in Stephenson County provide opportunities for swimming, horseback riding, golfing, camping, fishing, dude ranching, canoeing, boating, and biking (Ray and others, 1976).

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area, which is in Major Land Resource Areas 95B, 105, and 108B (fig. 1). Major land resource areas (MLRAs) are geographically associated land resource units that share a common land use, elevation, topography, climate, water, soils, and vegetation (USDA/NRCS, 2006). Stephenson County is a subset of MLRAs 95B, 105, and 108B. Map unit design and the detailed soil descriptions are based on the occurrence of each soil throughout an MLRA. In some cases a soil may be referred to that was not mapped in the Stephenson County subset but that is representative of the MLRA.

The information in this survey includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They dug many holes to study the soil profile, which is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or to the contact with bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

The soils in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil is associated with a particular kind of landform or with a segment of the landform. By observing the soils in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a

considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Formation and Classification of the Soils

This section relates the soils in the survey area to the major factors of soil formation and describes the system of soil classification.

Formation of the Soils

Soil-forming processes act on deposited or accumulated geologic material. The characteristics of the soil at any given point are determined by the parent material; living organisms, both on and in the soil; the climate; the topography; and the length of time that the forces of soil formation have acted on the soil material (Jenny, 1941).

Parent Material and Geology

Parent material is the unconsolidated organic and mineral material in which soils form. It ranges from soft, transported sediments to residuum, which is material weathered in place from bedrock. Parent material can be weathered or unweathered, depending on previous history of the material and the geologic process that produced the material. Common parent materials in glaciated areas are the sediments deposited by the action of glaciers, wind, and water. Also included as parent material are paleosols, which are ancient soils or previously weathered materials.

The composition of parent materials varies greatly in chemical and mineralogical characteristics, and these variations are typically reflected in the soils. In youthful soils the characteristics of the parent material determine the type of soil, but in some very strongly developed soils, the initial characteristics of the parent material may not be detectable. In most soils, alteration of the parent material is evident.

The bedrock in Stephenson County belongs to the Ordovician System or the Silurian System. It is generally covered by drift or loess, but it occurs as outcrops in some places (Doyle, 1965). Ordovician dolomite is dominant and occurs as the uppermost bedrock in probably as much as three-fourths of the county (fig. 3). Ordovician shale of the Maquoketa Formation is important in the western part of the county, particularly in the southwestern one-fourth, and because of its very high clay content is especially significant where it crops out or where soil profiles have developed in it. Outcrops of Maquoketa Shale or small areas of this shale near the surface also occur in isolated areas in the extreme southern part of the county. Dolomite of the Silurian System occurs at the higher elevations of the Silurian escarpment in the southwest corner of the county, and small, isolated areas are found as the uppermost bedrock on the mound at Waddams Grove, on caps of the higher ridges near the village of Eleroy, and in isolated areas along the southern boundary with Carroll County and northwestern Ogle County (Willman, 1973).

Ordovician sandstone is the uppermost bedrock in the main valleys of the Pecatonica River and Richland Creek, but it does not outcrop and is buried by many feet of alluvium. Dolomite of both Ordovician and Silurian age contains varying amounts of interbedded chert, and the Maquoketa Shale is commonly interbedded with dolomite.

An interesting phenomenon reported by many early investigators and described by Doyle is "ice-shove" areas, where large segments or blocks of dolomite were moved



Figure 3.—A limestone escarpment in an area of Oneco soils.

only short distances by glacial ice and have maintained their bedrock identity even though in places the rock is badly broken (Doyle, 1965). Such areas are common southeast and northeast of Freeport and between Cedarville and Dakota.

In places, bedrock is an important part of some soil profiles and has a significant effect on soil properties. The entire county was glaciated, but glacial drift is considered to be less than 50 feet thick in the entire county, except in the Pecatonica River Valley and possibly other stream valleys (Piskin and Bergstrom, 1967). The former bedrock valleys are filled with thick deposits, but the uplands are covered by much smaller amounts.

The age and classification of tills in this area of Illinois have historically been very controversial. Most upland glacial deposits in Stephenson County are presently considered to be of the Illinoian Glacial Stage and related to the Green Bay Lobe. Some of the glacial deposits in the uplands south of the Pecatonica River in the eastern part of the county have been assigned to the Altonian Substage of the Wisconsinian Glacial Stage. The area of Illinoian deposits was subjected to intense episodes of erosion by both water and wind when younger ice of the Woodfordian Substage of the Wisconsinian Glacial Stage was at its maximum extent to the south and east of Stephenson County (Frye and others, 1969). As a result, many areas of Illinoian till were nonuniformly eroded and truncated and now contain youthful and old soils together in the same landscape. A general understanding of geologic events in the area is necessary to the understanding of the characteristics and distribution of present-day soils.

When the Altonian Substage of the Wisconsinian Glacial Stage blocked the eastward flow of the Pecatonica River, glacial Lake Silveria existed for a time in the Pecatonica River and Yellow Creek Valleys (Willman, 1973). Lake silts and stratified drift of Wisconsinian age are present in these valleys.

When the ice of the substages of the Wisconsin Stage melted, large amounts of sediment filled the Mississippi River Valley. Following the retreat of the glaciers and during dry seasons, the fine sediments, largely of silt size, were blown from the valleys onto the uplands and formed a cover of varying thickness on the older deposits of drift. In places, Roxana silts and deposits of Robein silts occur as the lower part of the silty deposits. After the Woodfordian Substage of the Wisconsin Stage melted, a rather extensive windblown silty deposit called Peoria Loess was added as the uppermost and dominant portion of the surficial silty deposits. In stable landscape positions (level to gently sloping ridgetops that are little affected by erosion) the silty or loess deposits range from about 7 to 13 feet thick in the western and southern parts of the county; they range from about 3 to 5 feet thick in the areas toward the northeast (Wascher and others, 1971). In the more sloping areas, the loess is thinner or does not occur at all.

The youngest significant sediments are the alluvial materials, mainly silty in texture, that have accumulated on the flood plains along the major streams.

Living Organisms

The vegetation that grew in Stephenson County prior to the time of settlement is responsible for some of the differences in soils. The native vegetation in the area had a particular effect on the accumulation of organic material and its influence on the color of the surface soil. The dark soils formed under native prairie grasses; the lighter colored soils formed where forests, mainly oaks and hickories, grew for long periods of time. Some soils developed under mixed grass and forest or were forested for a relatively short time before being cleared; the surface layer in these soils is moderately dark and has an intermediate content of organic matter.

Animals that live on and in the soil also have influenced soil development, but generally to a lesser extent than plants have. Human activities, such as clearing forests, cultivating, fertilizing, draining, irrigating, and excavating and filling, have changed the course of soil formation. Those activities have been recent enough, however, that their effects on soil development are not yet very apparent.

Climate

Climate is an important soil-forming factor, primarily because the kind and degree of weathering, which greatly affect soil horizons and their properties, are largely controlled by rainfall and temperature. Climate is also largely responsible for the type of native vegetation that grows on the soils. The humid-temperate climate of Stephenson County favored the weathering and reduction in size of soil minerals and the formation and movement of clay downward in the soil profile, especially where parent materials have been in place for a long time. The prevailing rainfall has influenced the removal, through leaching, of some of the basic elements in the soils and has replaced them with hydrogen. This process has imparted varying degrees of acidity to different horizons in the soil profile.

Topography

Topography influences water infiltration and percolation, runoff, and erosion in a given area. The moisture status of most soils in a given climate is largely controlled by topography and drainage. Where soils formed in uniform, permeable, medium textured materials, such as loess, natural drainage is closely related to slope. Well drained and moderately well drained soils are in sloping areas, and somewhat poorly drained and poorly drained soils are in level areas or in depressions. In areas where sandy parent materials are very permeable, well drained soils are on all slopes and in level areas, unless there is a permanently high water table. Conversely, poorly drained and

somewhat poorly drained soils may be on slopes in areas that have slowly permeable parent materials, such as heavy till, which has a high content of clay.

Level to sloping land surfaces, which dominate most of the upland areas of Stephenson County, are conducive to the development of poorly drained and somewhat poorly drained soils that have a high water table.

On steep slopes, rainfall tends to run off rather than pass through the soil. This tendency, coupled with the removal of materials under natural conditions on steep slopes, results in the development of soils that have a thin solum and weak profile development or horizonation.

Time

The evaluation of the time factor in soil development and formation is difficult because of the combined influence of the other factors of soil formation. The influence of time cannot be evaluated simply in years. A relatively “youthful” (or only slightly weathered) soil and a relatively “old” (or strongly weathered) soil may develop in the same period of time if other factors of soil formation are quite different. If other factors of soil formation are similar, however, soils are generally more strongly developed or weathered and have greater horizon differentiation if they have been exposed to the soil-forming processes over a longer time.

Soils are weathered and develop more rapidly in materials containing low amounts of carbonate than in materials containing high amounts of carbonate. Also, they develop more rapidly in permeable rather than slowly permeable materials and under forest vegetation rather than grass vegetation.

The soils of Stephenson County are dominantly relatively “youthful.”

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 4 shows the classification of the soils in Stephenson County. The categories are defined in the following paragraphs.

ORDER. Twelve soil orders are recognized. The differences among orders reflect the dominant soil-forming processes and the degree of soil formation. Each order is identified by a word ending in *sol*. An example is Alfisol.

SUBORDER. Each order is divided into suborders primarily on the basis of properties that influence soil genesis and are important to plant growth or properties that reflect the most important variables within the orders. The last syllable in the name of a suborder indicates the order. An example is Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalfs*, the suborder of the Alfisols that has a udic moisture regime).

SUBGROUP. Each great group has a typical subgroup. Other subgroups are intergrades or extragrades. The typical is the central concept of the great group; it is not necessarily the most extensive. Intergrades are transitions to other orders, suborders, or great groups. Extragrades have some properties that are not representative of the great group but do not indicate transitions to any other known kind of soil. Each subgroup is identified by one or more adjectives preceding the name of the great

group. The adjective Typic identifies the subgroup that typifies the great group. An example is Typic Hapludalfs.

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Generally, the properties are those of horizons below plow depth where there is much biological activity. Among the properties and characteristics considered are particle-size class, mineral content, temperature regime, thickness of the root zone, cation-exchange capacity, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, active, mesic Typic Hapludalfs.

SERIES. The series consists of soils that have similar horizons in their profile. The horizons are similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile. The texture of the surface layer or of the substratum can differ within a series.

Soil Series and Detailed Soil Map Units

In this section, arranged in alphabetical order, each major soil series recognized in the survey area is described. Each series description is followed by detailed descriptions of the associated soil map units.

Characteristics of the soil and the material in which it formed are identified for each soil series. A pedon, a small three-dimensional area of soil, that is typical of the series in the survey area is described. The detailed description of each soil horizon follows standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993) and in the "Field Book for Describing and Sampling Soils" (Schoeneberger and others, 2002). Many of the technical terms used in the descriptions are defined in "Soil Taxonomy" (Soil Survey Staff, 1999) and in "Keys to Soil Taxonomy" (Soil Survey Staff, 2003). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information about each map unit is given under the headings "Use and Management of the Soils" and "Soil Properties."

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The contrasting components are mentioned in the map unit descriptions. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform

segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. The soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Fayette silt loam, 5 to 10 percent slopes, eroded, is a phase of the Fayette series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are called complexes. A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded, is an example.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, quarries, is an example.

Table 5 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Appleriver Series

Drainage class: Somewhat poorly drained

Landform: Stream terraces and ground moraines

Parent material: Loess over residuum derived from shale

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Hapludalfs

Typical Pedon

Appleriver silt loam, 2 to 5 percent slopes; 1,140 feet east and 2,460 feet north of the southwest corner of sec. 27, T. 29 N., R. 4 E.; Jo Daviess County, Illinois; USGS Elizabeth NE topographic quadrangle; lat. 42 degrees 28 minutes 49 seconds N. and long. 90 degrees 02 minutes 32 seconds W., NAD 83:

- Ap—0 to 10 inches (0 to 25 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate very fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.
- E—10 to 14 inches (25 to 36 cm); pale brown (10YR 6/3) silt loam; moderate medium platy structure; friable; many fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
- BE—14 to 19 inches (36 to 48 cm); yellowish brown (10YR 5/4) silt loam; moderate medium platy structure parting to moderate fine subangular blocky; friable; many fine roots; common faint pale brown (10YR 6/3) silt coatings on faces of peds; few fine distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; strongly acid; gradual smooth boundary.

- Bt1—19 to 26 inches (48 to 66 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to strong fine subangular blocky and angular blocky; friable; common fine roots; many faint brown (10YR 4/3) clay films and many faint pale brown (10YR 6/3) silt coatings on faces of peds; few distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.
- Bt2—26 to 34 inches (66 to 86 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots; many distinct grayish brown (10YR 5/2) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; strongly acid; gradual smooth boundary.
- 2Bt3—34 to 44 inches (86 to 112 cm); light olive brown (2.5Y 5/4) silty clay; weak coarse prismatic structure; firm; few very fine roots; few distinct grayish brown (2.5YR 5/2) clay films on faces of peds; 2 percent rock fragments (dominantly chert); few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; common medium and fine iron and manganese accumulations; band of reddish brown (5YR 4/4) material at a depth of 38 to 40 inches; moderately acid; clear smooth boundary.
- 2Bt4—44 to 58 inches (112 to 147 cm); light yellowish brown (2.5Y 6/4) silty clay; weak coarse prismatic structure; firm; few very fine roots; common distinct brownish yellow (10YR 6/6) clay films on faces of peds; common fine iron and manganese accumulations; few medium prominent greenish gray (5G 6/1) iron depletions in the matrix; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- 2Cr—58 to 60 inches (147 to 152 cm); mottled light brownish gray (2.5Y 6/2), yellowish brown (10YR 5/6), and greenish gray (5G 6/1) silty clay shale; massive; very firm; many fine lime concretions; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the ochric epipedon: 0 to 14 inches (0 to 36 cm)

Thickness of the albic horizon: 10 to 14 inches (25 to 36 cm)

Thickness of the argillic horizon: 19 to 50 inches (48 to 127 cm)

Depth to bedrock: 40 to 60 inches (102 to 152 cm)

Thickness of the loess: 30 to 50 inches (76 to 127 cm)

Ap horizon:

Hue—10YR

Value—4

Chroma—2 or 3

Texture—silt loam

E horizon:

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—silt loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 to 4

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay, silty clay loam, or clay

732B—Appleriver silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and ground moraines

Position on the landform: Summits, backslopes, and footslopes

Map Unit Composition

Appleriver and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a thicker dark surface layer
- Soils that have underlying shale at a depth of more than 60 inches

Dissimilar soils:

- The well drained Fayette soils in the higher positions on the landscape
- The poorly drained Sable soils on summits and toeslopes

Properties and Qualities of the Appleriver Soil

Parent material: Loess over residuum derived from shale

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Available water capacity: About 10.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 1.0 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

732C—Appleriver silt loam, 5 to 10 percent slopes

Setting

Landform: Stream terraces and ground moraines

Position on the landform: Backslopes, summits, and footslopes

Map Unit Composition

Appleriver and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a thicker dark surface layer
- Soils that have underlying shale at a depth of 20 to 40 inches

Dissimilar soils:

- Soils that have a seasonal high water table within a depth of 12 inches
- The well drained Fayette soils in the higher positions on the landscape
- The poorly drained Sable soils on summits and toeslopes

Properties and Qualities of the Appleriver Soil

Parent material: Loess over residuum derived from shale

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Impermeable

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Available water capacity: About 10.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 1.0 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Argyle Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Thin layer of loess over a paleosol that formed in till

Slope range: 2 to 10 percent

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Argyle silt loam, 2 to 5 percent slopes; 2,200 feet south and 1,300 feet east of the northwest corner of sec. 4, T. 25 N., R. 7 E.; Carroll County, Illinois; USGS Shannon topographic quadrangle; lat. 42 degrees 11 minutes 34 seconds N. and long. 89 degrees 42 minutes 11 seconds W., NAD 27:

Ap—0 to 7 inches (0 to 18 cm); black (10YR 2/1) silt loam; moderate fine and medium granular structure; friable; many fine and medium roots; moderately acid; clear smooth boundary.

- BE—7 to 12 inches (18 to 30 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common fine and medium roots; very dark gray (10YR 3/1) worm channels; common light gray (10YR 7/1) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.
- Bt1—12 to 22 inches (30 to 56 cm); yellowish brown (10YR 5/4) silty clay loam; strong fine and medium subangular blocky structure; firm; common fine roots; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; strongly acid; abrupt smooth boundary.
- 2Bt2—22 to 38 inches (56 to 97 cm); red (2.5YR 4/6) gravelly clay loam; moderate medium and coarse angular blocky structure; firm; few fine roots; common faint yellowish red (5YR 4/6) clay films, especially on pebbles; common fine black (N 2.5/) masses of iron-manganese oxide stains in the matrix; stone line in upper part of horizon; 25 percent gravel; strongly acid; clear smooth boundary.
- 2Bt3—38 to 70 inches (97 to 178 cm); red (2.5YR 4/6) gravelly sandy clay loam; moderate coarse angular blocky structure; firm; few fine roots; common distinct dark reddish brown (2.5YR 3/4) clay films on faces of peds; 20 percent gravel; strongly acid; clear smooth boundary.
- 2BC—70 to 84 inches (178 to 213 cm); dark red (2.5YR 3/6) sandy loam; weak coarse angular blocky structure; friable; 5 percent gravel; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 6 to 10 inches (15 to 25 cm)

Thickness of the loess: 15 to 25 inches (38 to 64 cm)

Thickness of the solum: 48 to more than 96 inches (122 to more than 244 cm)

A or Ap horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

E horizon (where present):

Hue—10YR

Value—4 to 6

Chroma—2 or 3

Texture—silt loam

BE and Bt horizons:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture—silty clay loam

2Bt and 2BC horizons:

Hue—7.5YR or 2.5YR

Value—3 to 5

Chroma—4 to 6

Texture—clay loam, sandy clay loam, or sandy loam or the gravelly analogs of these textures

227B—Argyle silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Argyle and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent*Similar soils:*

- Soils that have less than 20 inches or more than 40 inches of loess over the underlying till
- Soils that have a lighter colored surface layer

Dissimilar soils:

- Soils that have fractured limestone bedrock at a depth of less than 40 inches

Properties and Qualities of the Argyle Soil

Parent material: Thin layer of loess over a paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

227C2—Argyle silt loam, 5 to 10 percent slopes, eroded**Setting**

Landform: Ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Argyle and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent*Similar soils:*

- Soils that have less than 20 inches or more than 40 inches of loess over the underlying till
- Soils that have a lighter colored surface layer

Dissimilar soils:

- Soils that have fractured limestone bedrock at a depth of less than 40 inches

Properties and Qualities of the Argyle Soil

Parent material: Thin layer of loess over a paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Ashdale Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess over residuum derived from limestone

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Ashdale soil in map unit 411C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Ashdale silt loam, 2 to 5 percent slopes; at an elevation of 820 feet; 2,116 feet north and 45 feet west of the southeast corner of sec. 4, T. 27 N., R. 8 E.; Stephenson County, Illinois; USGS Freeport East topographic quadrangle; lat. 42 degrees 21 minutes 56 seconds N. and long. 89 degrees 34 minutes 27 seconds W., NAD 83:

Ap—0 to 7 inches (0 to 18 cm); black (10YR 2/1) silt loam; moderate fine and medium granular structure; friable; neutral; abrupt smooth boundary.

A1—7 to 10 inches (18 to 25 cm); black (10YR 2/1) silt loam; moderate medium and coarse granular structure; friable; neutral; clear smooth boundary.

A2—10 to 15 inches (25 to 38 cm); very dark grayish brown (10YR 3/2) silt loam; moderate fine granular structure; friable; few distinct black (10YR 2/1) organic coatings on faces of peds; neutral; clear smooth boundary.

Bt1—15 to 23 inches (38 to 58 cm); brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; few faint brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—23 to 33 inches (58 to 84 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; common faint

brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—33 to 43 inches (84 to 109 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; many faint brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt4—43 to 51 inches (109 to 130 cm); reddish brown (5YR 4/4) silty clay; weak coarse angular blocky structure; very firm; many faint dark reddish brown (5YR 3/4) clay films on faces of peds; slightly acid; abrupt smooth boundary.

2R—51 inches (130 cm); brownish yellow (10YR 6/6) limestone bedrock.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches (18 to 51 cm)

Thickness of the loess: 36 to 50 inches (91 to 127 cm)

Thickness of the residuum: 2 to 20 inches (5 to 51 cm)

Thickness of the solum: 40 to 60 inches (102 to 152 cm)

Ap or AB horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 5

Texture—silty clay loam or silt loam

2BC horizon:

Hue—5YR to 10YR

Value—3 to 5

Chroma—3 to 5

Texture—silty clay or clay

411B—Ashdale silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Ashdale and similar soils: 85 percent

Dissimilar soils: 15 percent

Components of Minor Extent

Similar soils:

- Soils that have a thinner dark surface layer
- Soils that have a seasonal high water table at a depth of 48 to 72 inches

Dissimilar soils:

- Soils that have fractured limestone bedrock within a depth of 20 inches
- The well drained, very deep Ogle soils on summits and shoulders

Properties and Qualities of the Ashdale Soil

Parent material: Loess over residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very slow or slow
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 10.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

411C2—Ashdale silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Ashdale and similar soils: 90 percent
 Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a thinner dark surface layer
- Soils that have a seasonal high water table at a depth of 48 to 72 inches

Dissimilar soils:

- Soils that have fractured limestone bedrock within a depth of 20 inches

Properties and Qualities of the Ashdale Soil

Parent material: Loess over residuum derived from limestone
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very slow or slow
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Available water capacity: About 11.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Assumption Series

Drainage class: Moderately well drained

Landform: Ground moraines

Parent material: Loess over a paleosol that formed in till

Slope range: 5 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Taxadjunct features: The Assumption soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Assumption silt loam, 2 to 5 percent slopes; at an elevation of 720 feet (219 meters); 100 feet north and 300 feet east of the southwest corner of sec. 29, T. 15 N., R. 2 E.; Henry County, Illinois; USGS Andover topographic quadrangle; lat. 41 degrees 15 minutes 06 seconds N. and long. 90 degrees 17 minutes 43 seconds W., NAD 27:

- Ap—0 to 6 inches (0 to 15 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; many fine roots throughout; neutral; abrupt smooth boundary.
- A—6 to 13 inches (15 to 33 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; many fine roots throughout; slightly acid; clear smooth boundary.
- AB—13 to 16 inches (33 to 41 cm); very dark grayish brown (10YR 3/2) silt loam mixed with some brown (10YR 4/3) in the lower 2 inches, grayish brown (10YR 5/2) and brown (10YR 5/3) dry; weak medium subangular blocky structure; friable; many fine roots throughout; neutral; clear wavy boundary.
- Bt1—16 to 26 inches (41 to 66 cm); brown (10YR 4/3) silty clay loam; weak medium prismatic structure parting to moderate fine subangular blocky; firm; common fine roots between peds; many distinct brown (10YR 5/3) clay films on faces of peds; slightly acid; clear wavy boundary.
- Bt2—26 to 35 inches (66 to 89 cm); brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots between peds; many distinct brown (10YR 4/3) clay films on faces of peds; many medium distinct brownish yellow (10YR 6/6) masses of iron accumulation and common faint grayish brown (2.5Y 5/2) iron depletions in the matrix; slightly acid; abrupt wavy boundary.
- 2Bt3—35 to 51 inches (89 to 130 cm); yellowish brown (10YR 5/4) clay loam; weak medium subangular blocky structure; firm; common fine roots between peds; common distinct brown (10YR 4/3) clay films on faces of peds; many coarse prominent yellowish brown (10YR 5/8) masses of iron accumulation; common medium prominent light olive gray (5Y 6/2) iron depletions; slightly acid; clear wavy boundary.
- 2Bt4—51 to 60 inches (130 to 152 cm); brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; firm; common fine roots between peds; many distinct brown (10YR 4/3) clay films on faces of peds; many medium distinct brownish yellow (10YR 6/6) masses of iron accumulation; slightly acid; clear wavy boundary.

2C—60 to 80 inches (152 to 203 cm); brown (10YR 5/3) clay loam; massive; firm; common coarse faint grayish brown (2.5Y 5/2) iron depletions and common coarse faint brown (7.5YR 4/4) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 20 inches (18 to 51 cm)

Thickness of the loess: 20 to 40 inches (51 to 102 cm)

Thickness of the solum: 48 to more than 70 inches (122 to more than 178 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam or silty clay loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 to 6

Texture—silty clay loam or silt loam

2Btg or 2Bt horizon:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 to 6

Texture—clay loam, silty clay loam, loam, clay, or silty clay

2C or 2Cg horizon:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 to 6

Texture—clay loam, silty clay loam, loam, clay, or silty clay

259C2—Assumption silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Shoulders and backslopes

Map Unit Composition

Assumption and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a thinner dark surface layer
- Soils that have slopes of less than 5 percent or more than 10 percent
- Soils that have a thicker layer of silty material
- Soils that have reddish glacial material in the lower part of the subsoil
- Soils that have a seasonal high water table at a depth of 1 to 2 feet

Dissimilar soils:

- The somewhat poorly drained Radford soils on side slopes
- Poorly drained soils in seep areas on side slopes

Properties and Qualities of the Assumption Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Moderately well drained
Slowest permeability within a depth of 40 inches: Slow
Permeability below a depth of 60 inches: Slow or moderately slow
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 4.0 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 2.0 feet,
 February through April
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Atterberry Series

Drainage class: Somewhat poorly drained
Landform: Ground moraines
Parent material: Loess
Slope range: 0 to 5 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon

Atterberry silt loam, 0 to 2 percent slopes; at an elevation of 660 feet (201 meters); 1,650 feet north and 1,120 feet east of the southwest corner of sec. 34, T. 16 N., R. 9 E.; Bureau County, Illinois; USGS Princeton South topographic quadrangle; lat. 41 degrees 19 minutes 30 seconds N. and long. 89 degrees 33 minutes 15 seconds W., NAD 27:

- Ap—0 to 9 inches (0 to 23 cm); very dark grayish brown (10YR 3/2) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; few fine roots; neutral; abrupt smooth boundary.
- E—9 to 13 inches (23 to 33 cm); light brownish gray (10YR 6/2) silt loam; moderate thin platy structure; friable; few fine roots; common fine faint grayish brown (10YR 5/2) redoximorphic depletions in the matrix; slightly acid; clear smooth boundary.
- BE—13 to 17 inches (33 to 43 cm); brown (10YR 5/3) silt loam; moderate medium platy structure parting to moderate very fine subangular blocky; friable; few fine roots; common faint brown (10YR 4/3) clay films on faces of ped and common faint light gray (10YR 7/2) (dry) redoximorphic clay depletions on faces of ped; few fine distinct dark brown (7.5YR 3/2) iron-manganese oxide concretions throughout; few fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear smooth boundary.

- Bt—17 to 24 inches (43 to 61 cm); brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; few fine roots; many faint dark grayish brown (10YR 4/2) clay films and common faint light gray (10YR 7/2) (dry) redoximorphic clay depletions on faces of peds; common fine rounded dark brown (7.5YR 3/2) iron-manganese oxide concretions throughout; common fine faint grayish brown (10YR 5/2) iron depletions and common fine distinct yellowish brown (10YR 5/6) iron oxide concentrations in the matrix; strongly acid; clear smooth boundary.
- Btg1—24 to 33 inches (61 to 84 cm); grayish brown (2.5Y 5/2) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many distinct grayish brown (10YR 5/2) clay films and few distinct light gray (10YR 7/2) (dry) redoximorphic clay depletions on faces of peds; common fine rounded dark brown (7.5YR 3/2) iron-manganese oxide concretions throughout; common fine faint light brownish gray (2.5Y 6/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) iron oxide concentrations in the matrix; strongly acid; clear smooth boundary.
- Btg2—33 to 40 inches (84 to 102 cm); light brownish gray (2.5Y 6/2) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films and few faint light gray (10YR 7/2) (dry) redoximorphic clay depletions on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; common fine prominent rounded dark brown (7.5YR 3/2) concretions of iron-manganese oxide; many fine prominent yellowish brown (10YR 5/6) iron oxide concentrations in the matrix; strongly acid; clear smooth boundary.
- Btg3—40 to 48 inches (102 to 122 cm); light brownish gray (2.5Y 6/2) silty clay loam; moderate coarse prismatic structure; friable; few fine roots; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; many fine prominent yellowish brown (10YR 5/6) iron oxide concentrations in the matrix; strongly acid; clear smooth boundary.
- BCg—48 to 55 inches (122 to 140 cm); light brownish gray (2.5Y 6/2) silt loam; weak coarse prismatic structure; friable; common distinct grayish brown (10YR 5/2) clay films on faces of peds; many prominent very dark grayish brown (10YR 3/2) clay films lining pores; many medium prominent yellowish brown (10YR 5/6) iron oxide concentrations in the matrix; moderately acid; clear smooth boundary.
- Cg—55 to 60 inches (140 to 152 cm); light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) iron oxide concentrations in the matrix; slightly acid.

Range in Characteristics

Thickness of the solum: 42 to 72 inches (107 to 183 cm)

Ap or A horizon:

Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

E horizon:

Hue—10YR
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Bt or Btg horizon:

Hue—10YR, 2.5Y, or 5Y
Value—4 to 6

Chroma—2 to 4
Texture—silty clay loam or silt loam

C or Cg horizon:

Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 4
Texture—silt loam

61A—Atterberry silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits

Map Unit Composition

Atterberry and similar soils: 98 percent

Dissimilar soils: 2 percent

Components of Minor Extent

Similar soils:

- Soils that have a thicker dark surface layer
- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table at a depth of more than 24 inches

Dissimilar soils:

- The well drained Greenbush, Fayette, and Rozetta soils in the higher landscape positions
- The poorly drained Sable soils on summits and toeslopes

Properties and Qualities of the Atterberry Soil

Parent material: Loess

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.5 to 3.5 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland where drained

Hydric soil status: Not hydric

61B—Atterberry silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits

Map Unit Composition

Atterberry and similar soils: 98 percent

Dissimilar soils: 2 percent

Components of Minor Extent

Similar soils:

- Soils that have a thicker dark surface layer
- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table at a depth of 24 to 40 inches

Dissimilar soils:

- The well drained Greenbush and Rozetta soils in the higher landscape positions
- The poorly drained Sable soils on summits and toeslopes

Properties and Qualities of the Atterberry Soil

Parent material: Loess

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.5 to 3.5 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

Batavia Series

Drainage class: Well drained

Landform: Outwash plains and stream terraces

Parent material: Loess over stratified outwash

Slope range: 0 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Batavia silt loam, 2 to 5 percent slopes; at an elevation of 770 feet (235 meters); 57 feet south and 1,482 feet east of the northwest corner of sec. 8, T. 26 N., R. 8 E.; Stephenson County, Illinois; USGS Freeport East topographic quadrangle; lat. 42 degrees 16 minutes 20 seconds N. and long. 89 degrees 36 minutes 25 seconds W., NAD 83:

- Ap—0 to 9 inches (0 to 23 cm); very dark grayish brown (10YR 3/2) silt loam; weak medium and coarse granular structure; friable; many roots; neutral; abrupt smooth boundary.
- E—9 to 12 inches (23 to 30 cm); dark grayish brown (10YR 4/2) silt loam; weak medium granular structure; firm; common roots; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few distinct very dark grayish brown (10YR 3/2) organic stains on wormcasts and surfaces along root channels; neutral; clear smooth boundary.
- BE—12 to 17 inches (30 to 43 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; common roots; few distinct very dark grayish brown (10YR 3/2) organic stains on surfaces along root channels; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.
- Bt1—17 to 25 inches (43 to 64 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate and strong fine subangular blocky structure; firm; common roots; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few distinct very dark grayish brown (10YR 3/2) and few faint dark yellowish brown (10YR 3/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt2—25 to 30 inches (64 to 76 cm); brown (10YR 5/3) silty clay loam; moderate and strong fine and medium subangular blocky structure; firm; common roots; few faint light gray (10YR 7/2) (dry) silt coatings on faces of peds; common faint brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt3—30 to 45 inches (76 to 114 cm); brown (10YR 5/3) silty clay loam; moderate medium angular and subangular blocky structure; firm; few roots; many faint light gray (10YR 7/2) (dry) silt coatings on faces of peds; common faint brown (10YR 4/3) clay films on faces of peds; few fine faint brown (7.5YR 4/4) masses of iron in the matrix; few fine faint very dark brown (10YR 2/2) accumulations of iron and manganese in the matrix; moderately acid; clear smooth boundary.
- 2Bt4—45 to 50 inches (114 to 127 cm); brown (10YR 5/3) and dark yellowish brown (10YR 4/4) clay loam; weak medium and coarse angular blocky structure; firm; few roots; few faint light gray (10YR 7/2) (dry) silt coatings on faces of peds; common faint brown (10YR 4/3) clay films on faces of peds; few fine faint brown (7.5YR 4/4) masses of iron in the matrix; few medium faint very dark brown (10YR 2/2) accumulations of iron-manganese oxide in the matrix; slightly acid; clear smooth boundary.
- 2C—50 to 60 inches (127 to 152 cm); stratified yellowish brown (10YR 5/4) sandy loam, dark yellowish brown (10YR 3/4) clay loam, and brown (10YR 5/3) and pale brown (10YR 6/3) silt loam; massive; friable; common fine faint brown (7.5YR 4/4) and common fine distinct strong brown (7.5YR 5/6) masses of iron in the matrix; 2 percent subrounded gravel; slightly acid.

Range in Characteristics

Thickness of the loess: 40 to 60 inches (102 to 203 cm)

Depth to carbonates: 45 to more than 70 inches (114 to more than 178 cm)

Thickness of the solum: 42 to 70 inches (107 to 178 cm)

Ap or A horizon:

Hue—10YR
 Value—2 to 3
 Chroma—1 to 3
 Texture—silt loam
 Reaction—moderately acid to neutral

E horizon (where present):

Hue—10YR
 Value—4 to 6
 Chroma—2 or 3
 Texture—silt loam
 Reaction—moderately acid to neutral

Bt horizon:

Hue—10YR
 Value—4 or 5
 Chroma—3 or 4
 Texture—silt loam or silty clay loam
 Reaction—strongly acid to slightly acid

2Bt and 2C horizons:

Hue—10YR
 Value—3 to 6
 Chroma—3 to 6
 Texture—sandy loam or loam with strata of sandy clay loam, silt loam, and clay loam
 Reaction—strongly acid to slightly acid
 Content of rock fragments—less than 10 percent

105A—Batavia silt loam, 0 to 2 percent slopes***Setting***

Landform: Outwash plains and stream terraces

Position on the landform: Summits

Map Unit Composition

Batavia and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table at a depth of 48 to 72 inches

Dissimilar soils:

- The somewhat poorly drained Virgil soils in shallow depressions and in drainageways
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Batavia Soil

Parent material: Loess over stratified outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

105B—Batavia silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains
Position on the landform: Summits and backslopes

Map Unit Composition

Batavia and similar soils: 90 percent
 Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table at a depth of 48 to 72 inches

Dissimilar soils:

- The somewhat poorly drained Virgil soils in shallow depressions and in drainageways
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Batavia Soil

Parent material: Loess over stratified outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate or moderately rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

105C—Batavia silt loam, 5 to 10 percent slopes

Setting

Landform: Outwash plains

Position on the landform: Backslopes

Map Unit Composition

Batavia and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have outwash at a depth of less than 40 inches or more than 60 inches
- Soils that have a seasonal high water table at a depth of 48 to 72 inches

Dissimilar soils:

- The somewhat poorly drained Virgil soils in shallow depressions and in drainageways

Properties and Qualities of the Batavia Soil

Parent material: Loess over stratified outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Beaucoup Series

Drainage class: Poorly drained

Landform: Flood plains

Parent material: Alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls

Typical Pedon

Beaucoup silty clay loam, 0 to 2 percent slopes, rarely flooded; 1,540 feet north and 1,860 feet east of the southwest corner of sec. 26, T. 20 N., R. 4 E.; Whiteside County, Illinois; USGS Erie topographic quadrangle; lat. 41 degrees 41 minutes 21 seconds N. and long. 90 degrees 00 minutes 34 seconds W., NAD 27:

- Ap—0 to 10 inches (0 to 25 cm); black (N 2.5/) silty clay loam, very dark gray (10YR 3/1) dry; weak medium and fine subangular blocky structure parting to moderate fine granular; friable; neutral; abrupt smooth boundary.
- AB—10 to 16 inches (25 to 41 cm); black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate medium subangular blocky structure parting to moderate fine granular; friable; few fine distinct dark yellowish brown (10YR 4/4) iron masses in the matrix; neutral; clear smooth boundary.
- Bg1—16 to 24 inches (41 to 61 cm); dark gray (10YR 4/1) silty clay loam; moderate medium and fine subangular blocky structure; friable; few fine distinct dark yellowish brown (10YR 4/4) iron masses in the matrix; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.
- Bg2—24 to 33 inches (61 to 84 cm); dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine distinct brown (10YR 5/3) iron masses in the matrix; few fine iron-manganese concretions; neutral; clear smooth boundary.
- Bg3—33 to 43 inches (84 to 109 cm); grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine prominent dark yellowish brown (10YR 4/4) iron masses in the matrix; neutral; clear smooth boundary.
- BCg—43 to 50 inches (109 to 127 cm); light brownish gray (2.5Y 6/2) silty clay loam; weak medium prismatic structure; friable; very dark gray (10YR 3/1) krotovinas 2 inches wide at a depth of 46 inches; few fine prominent dark yellowish brown (10YR 4/6) iron masses in the matrix; slightly alkaline; gradual smooth boundary.
- Cg—50 to 60 inches (127 to 152 cm); grayish brown (2.5Y 5/2) and light brownish gray (2.5Y 6/2) silt loam; massive; friable; common medium and fine prominent strong brown (7.5YR 4/6) iron masses in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches (25 to 61 cm)

Thickness of the solum: 35 to 65 inches (89 to 165 cm)

Ap or A horizon:

Hue—10YR or N

Value—2 to 3

Chroma—0 to 2

Texture—silty clay loam

Bg or Btg horizon(s):

Hue—10YR, 2.5Y, 5Y, or N

Value—3 to 6

Chroma—0 to 2

Texture—silty clay loam

BCg and/or Cg horizon(s):

Hue—10YR, 2.5Y, 5Y, or N

Value—4 to 6

Chroma—0 to 2

Texture—silty clay loam or silt loam; thin strata of loam, sandy loam, fine sandy loam, or very fine sandy loam in some pedons

8070A—Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Beaucoup and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a dark surface layer more than 24 inches thick
- Soils that have less silt and more sand in the surface layer

Dissimilar soils:

- The well drained Huntsville soils in the slightly higher positions

Properties and Qualities of the Beaucoup Soil

Parent material: Alluvium

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 5.0 to 6.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface, November through June

Depth and months of deepest ponding: 0.2 foot, January to May

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

Beavercreek Series

Drainage class: Well drained

Landform: Flood plains

Parent material: Alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Loamy-skeletal, mixed, active, nonacid, mesic Typic Udifluvents
Taxadjunct features: The Beavercreek soils in this survey area contain free carbonates at a more shallow depth than is defined as the range for the series. This difference, however, does not significantly affect the use or behavior of the soils. These soils are classified as loamy-skeletal, mixed, active, calcareous, mesic Typic Udifluvents.

Typical Pedon

Beavercreek silt loam, 0 to 2 percent slopes, frequently flooded; 1,500 feet west and 370 feet south of the northeast corner of sec. 7, T. 26 N., R. 5 E.; Jo Daviess County, Illinois; USGS Kent topographic quadrangle; lat. 42 degrees 16 minutes 05 seconds N. and long. 89 degrees 57 minutes 54 seconds W., NAD 27:

- A—0 to 4 inches (0 to 10 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; many very fine roots; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; less than 1 percent chert fragments of gravel size; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- C1—4 to 7 inches (10 to 18 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; massive; friable; many very fine roots; common distinct brown (10YR 4/3 and 5/3) depositional strata; many distinct very dark gray (10YR 3/1) organic coatings on surfaces along pores and root channels; less than 1 percent chert fragments of gravel size; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- C2—7 to 18 inches (18 to 46 cm); brown (10YR 5/3) gravelly silt loam; massive; friable; few very fine roots; depositional strata of very dark gray (10YR 3/1) loam; 20 percent chert and dolomite fragments of gravel size; slightly effervescent; slightly alkaline; abrupt smooth boundary.
- 2C3—18 to 32 inches (46 to 81 cm); dark grayish brown (10YR 4/2) extremely gravelly loam; massive; friable; few very fine roots; common distinct very dark gray (10YR 3/1) organic films; 70 percent chert and dolomite fragments of gravel size; strongly effervescent; slightly alkaline; abrupt smooth boundary.
- 2C4—32 to 52 inches (81 to 132 cm); dark grayish brown (10YR 4/2) very gravelly loam with depositional strata of coarse sand; massive; friable; common distinct very dark grayish brown (10YR 3/2) and very dark gray (10YR 3/1) organic coatings on surfaces along pores and root channels; 50 percent chert fragments of gravel size; violently effervescent; moderately alkaline; clear smooth boundary.
- 2Ab—52 to 57 inches (132 to 145 cm); very dark gray (2.5Y 3/1) gravelly silt loam; few fine prominent light olive brown (2.5Y 5/6) mottles; weak medium and fine subangular blocky structure; friable; 30 percent chert and dolomite fragments of gravel size; light olive brown (2.5Y 5/6) and olive yellow (2.5Y 6/6), weathered rock fragments; slightly effervescent; neutral; abrupt smooth boundary.
- 2Bgb—57 to 60 inches (145 to 152 cm); dark grayish brown (2.5Y 4/2) very gravelly loam; common medium prominent yellowish brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable; 70 percent chert and dolomite fragments of gravel size; common distinct very dark gray (2.5Y 3/1) organic coatings on faces of peds; strongly effervescent; slightly alkaline.

Range in Characteristics

Depth to carbonates: 0 to 10 inches (0 to 25 cm)

A and C horizons:

Hue—10YR

Value—3 to 6

Chroma—2 or 3

Texture—fine sandy loam, very fine sandy loam, loam, or silt loam

2C horizon:

Hue—10YR or 2.5Y

Value—3 to 6

Chroma—2 to 4

Texture—sand, loamy sand, sandy loam, loam, or silt loam or the gravelly or extremely gravelly analogs of these textures

2Ab horizon:

Hue—5Y, 2.5Y, or N

Value—2 to 3

Chroma—0 or 1

Texture—silty clay loam, loam, or silt loam or the gravelly or very gravelly analogs of these textures

2Bb horizon:

Hue—10YR or 2.5Y

Value—3 to 6

Chroma—2 to 4

Texture—silty clay loam, loam, or silt loam or the gravelly or very gravelly analogs of these textures

**8579A—Beavercreek silt loam, 0 to 2 percent slopes,
occasionally flooded*****Setting****Landform:* Flood plains***Map Unit Composition***

Beavercreek and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils that have more sand and less gravel

Dissimilar soils:

- The somewhat poorly drained Lawson soils

Properties and Qualities of the Beavercreek Soil*Parent material:* Alluvium*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderately rapid*Permeability below a depth of 60 inches:* Moderately rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 5.6 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 3.0 percent*Shrink-swell potential:* Low*Ponding:* None*Frequency and most likely period of flooding:* Occasional, November through June*Potential for frost action:* Low*Hazard of corrosion:* Low for steel and concrete*Surface runoff class:* Very low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4s

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Birkbeck Series

Drainage class: Moderately well drained

Landform: Ground moraines and end moraines

Parent material: Loess over till

Slope range: 2 to 18 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Taxadjunct features: The Birkbeck soils in this survey area are not saturated with water in one or more layers within 40 inches (100 cm) of the mineral soil surface for 20 or more consecutive days or 30 or more cumulative days. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty, mixed, superactive, mesic Typic Hapludalfs.

Typical Pedon

Birkbeck silt loam, 2 to 5 percent slopes; at an elevation of 780 feet (238 meters); 792 feet north and 2,442 feet west of the southeast corner of sec. 18, T. 28 N., R. 8 E.; Stephenson County, Illinois; USGS Orangeville topographic quadrangle; lat. 42 degrees 25 minutes 45 seconds N. and long. 89 degrees 51 minutes 38 seconds W., NAD 27:

Ap—0 to 6 inches (0 to 15 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; few very fine and fine roots throughout; slightly acid; abrupt smooth boundary.

E—6 to 14 inches (15 to 36 cm); brown (10YR 4/3) silt loam; moderate very thin platy structure; friable; few distinct dark brown (10YR 3/3) organic coatings on faces of peds; few distinct gray (10YR 6/1) (dry) silt coatings on faces of peds; very strongly acid; clear smooth boundary.

Bt1—14 to 21 inches (36 to 53 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—21 to 33 inches (53 to 84 cm); brown (10YR 5/3) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—33 to 44 inches (84 to 112 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; firm; few fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct dark yellowish brown (10YR 4/6) iron masses in the matrix; moderately acid; clear smooth boundary.

2Bt4—44 to 60 inches (112 to 152 cm); dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; friable; few faint brown (10YR 4/3) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions; common fine distinct dark yellowish brown (10YR 4/6) iron masses in the matrix; few prominent black (5YR 2.5/1) soft accumulations of iron-manganese throughout; moderately acid.

Range in Characteristics

Thickness of the loess: 40 to 60 inches (102 to 152 cm)

Depth to free carbonates: 44 to 70 inches (112 to 178 cm)

Thickness of the solum: 44 to 70 inches (112 to 178 cm)

Ap or A horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 3

Texture—silt loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam or silt loam

2Bt or 2BC horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—2 to 8

Texture—clay loam, loam, silty clay loam, or silt loam

2C horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—loam, clay loam, silty clay loam, or silt loam

233B—Birkbeck silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Backslopes and summits

Map Unit Composition

Birkbeck and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have more than 60 inches of silty material over the calcareous till
- Soils that have less sand and more clay in the substratum

Dissimilar soils:

- The somewhat poorly drained Kendall soils in the slightly lower landscape positions

Properties and Qualities of the Birkbeck Soil

Parent material: Loess over till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

233C2—Birkbeck silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines

Position on the landform: Shoulders and backslopes

Map Unit Composition

Birkbeck and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have more than 60 inches of silty material over the calcareous till
- Soils that have less sand and more clay in the substratum

Dissimilar soils:

- Soils that are severely eroded and have a surface layer of silty clay loam

Properties and Qualities of the Birkbeck Soil

Parent material: Loess over till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.5 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: High for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

233D2—Birkbeck silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines

Map Unit Composition

Birkbeck and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have more than 60 inches of silty material over the calcareous till
- Soils that have less sand and more clay in the substratum

Dissimilar soils:

- Soils that are severely eroded and have a surface layer of silty clay loam

Properties and Qualities of the Birkbeck Soil

Parent material: Loess over till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 13.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.5 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Camden Series

Drainage class: Well drained

Landform: Stream terraces and outwash plains

Parent material: Loess over outwash

Slope range: 2 to 18 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Camden silt loam, 0 to 2 percent slopes; 1,280 feet west and 1,740 feet south of the northeast corner of sec. 12, T. 15 N., R. 8 E.; Bureau County, Illinois; USGS Wyandot topographic quadrangle; lat. 41 degrees 18 minutes 05 seconds N. and long. 89 degrees 30 minutes 52 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; few fine roots; slightly acid; abrupt smooth boundary.
- E—7 to 12 inches (18 to 30 cm); yellowish brown (10YR 5/4) silt loam; weak medium platy structure parting to weak very fine subangular blocky; friable; few fine roots; neutral; clear smooth boundary.
- Bt1—12 to 18 inches (30 to 46 cm); yellowish brown (10YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; common distinct yellowish brown (10YR 5/4) clay films on faces of peds; neutral; clear smooth boundary.
- Bt2—18 to 26 inches (46 to 66 cm); yellowish brown (10YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt3—26 to 34 inches (66 to 86 cm); yellowish brown (10YR 5/6) clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt4—34 to 37 inches (86 to 94 cm); strong brown (7.5YR 5/6) clay loam; weak medium subangular blocky structure; friable; few fine roots; many distinct brown (7.5YR 4/4) clay films on faces of peds; about 7 percent gravel; slightly acid; clear smooth boundary.
- 2Bt5—37 to 48 inches (94 to 122 cm); strong brown (7.5YR 5/6) sandy clay loam; 1-inch strata of yellowish brown (10YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay films on faces of peds; about 5 percent gravel; slightly acid; clear smooth boundary.
- 2Bt6—48 to 53 inches (122 to 135 cm); strong brown (7.5YR 5/6) sandy loam; weak medium subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay bridging between sand grains; about 2 percent gravel; neutral; clear wavy boundary.
- 2C—53 to 60 inches (135 to 152 cm); brown (7.5YR 4/4) sandy loam that has thin strata of loamy sand; massive; very friable; about 5 percent gravel; neutral.

Range in Characteristics

Depth to the base of the argillic horizon: 35 to 60 inches (89 to 152 cm)

Ap horizon:

Hue—10YR

Value—3 to 5

Chroma—2 or 3

Texture—silt loam or silty clay loam

E horizon (where present):

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—silt loam

Bt horizon:

Hue—7.5YR or 10YR
 Value—4 to 6
 Chroma—3 to 6
 Texture—silty clay loam or silt loam

2Bt horizon:

Hue—7.5YR, 10YR, or 2.5Y
 Value—4 to 6
 Chroma—3 to 6
 Texture—silty clay loam, loam, clay loam, sandy loam, sandy clay loam, or silt loam

2C horizon:

Hue—7.5YR or 10YR
 Value—4 to 6
 Chroma—3 to 6
 Texture—stratified sandy loam, loam, or silt loam with thin strata of other textures

134B—Camden silt loam, 2 to 5 percent slopes***Setting***

Landform: Stream terraces and outwash plains

Position on the landform: Shoulders and backslopes

Map Unit Composition

Camden and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils that have a darker surface layer
- Soils that have limestone bedrock at a depth of 40 to 60 inches
- Soils that have outwash at a depth of more than 40 inches

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Camden Soil

Parent material: Loess over outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

134C2—Camden silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces

Position on the landform: Backslopes and shoulders

Map Unit Composition

Camden and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have limestone bedrock at a depth of 40 to 60 inches
- Soils that have outwash at a depth of more than 40 inches

Dissimilar soils:

- Soils that are severely eroded and have a surface layer of silty clay loam
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Camden Soil

Parent material: Loess over stratified loamy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

134C3—Camden silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Stream terraces and outwash plains

Position on the landform: Shoulders and backslopes

Map Unit Composition

Camden and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have limestone bedrock at a depth of 40 to 60 inches
- Soils that have outwash at a depth of more than 40 inches

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Camden Soil

Parent material: Loess over outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.2 to 1.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

134D2—Camden silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Stream terraces and outwash plains

Position on the landform: Shoulders and backslopes

Map Unit Composition

Camden and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have limestone bedrock at a depth of 40 to 60 inches

Dissimilar soils:

- Soils that are severely eroded and have a surface layer of silty clay loam
- The moderately well drained Elco soils on shoulders and backslopes

Properties and Qualities of the Camden Soil

Parent material: Loess and/or outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.5 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Casco Series

Drainage class: Somewhat excessively drained

Landform: Stream terraces

Parent material: Loamy alluvium over calcareous stratified sandy outwash

Slope range: 4 to 20 percent

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic Hapludalfs

Typical Pedon

Casco loam, in an area of Hennepin-Casco complex, 25 to 60 percent slopes; 40 feet south and 54 feet west of the northeast corner of sec. 10, T. 15 N., R. 8 E.; Bureau County, Illinois; USGS Wyandot topographic quadrangle; lat. 41 degrees 18 minutes 22 seconds N. and long. 89 degrees 32 minutes 59 seconds W., NAD 27:

A—0 to 6 inches (0 to 15 cm); very dark grayish brown (10YR 3/2) loam, brown (10YR 5/3) dry; moderate medium subangular blocky structure; friable; many fine roots; slightly acid; clear smooth boundary.

Bt1—6 to 13 inches (15 to 33 cm); brown (10YR 4/3) loam; moderate fine and very fine subangular blocky structure; friable; many fine roots; few faint dark brown (10YR 3/3) clay films on faces of peds; neutral; clear smooth boundary.

2Bt2—13 to 17 inches (33 to 43 cm); brown (7.5YR 4/4) gravelly clay loam; moderate medium subangular blocky structure; friable; common fine roots; common faint

dark brown (7.5YR 3/4) clay films on faces of peds; neutral; clear smooth boundary.

2BC—17 to 24 inches (43 to 61 cm); dark yellowish brown (10YR 4/4) very gravelly sandy clay loam; weak fine subangular blocky structure; very friable; few fine roots; neutral; abrupt smooth boundary.

2C—24 to 60 inches (61 to 152 cm); yellowish brown (10YR 5/4) sand and gravel; single grain; loose; about 25 percent gravel as an average; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to sandy and gravelly deposits: 10 to 20 inches (25 to 51 cm)

Depth to carbonates: 10 to 20 inches (25 to 51 cm)

Thickness of the solum: 10 to 20 inches (25 to 51 cm)

A horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—5YR, 7.5YR, or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—clay loam, sandy clay loam, loam, or silty clay loam or the gravelly analogs of these textures

Content of gravel—0 to 35 percent

C horizon:

Hue—7.5YR or 10YR

Value—4 to 7

Chroma—3 or 4

Texture—sand and gravel or the gravelly, very gravelly, or extremely gravelly analogs of sand or coarse sand

Content of gravel—15 to 70 percent

735C2—Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded

Setting

Landform: Stream terraces

Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent

Rodman and similar soils: 31 percent

Fox and similar soils: 29 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 3.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits

Drainage class: Excessively drained

Slowest permeability within a depth of 40 inches: Moderately rapid

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 2.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Low for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 7.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—3e; Rodman—4s; Fox—3e

Prime farmland category: Not prime farmland

Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

735D2—Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded

Setting

Landform: Stream terraces

Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent

Rodman and similar soils: 31 percent

Fox and similar soils: 29 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 3.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits

Drainage class: Excessively drained

Slowest permeability within a depth of 40 inches: Moderately rapid

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 2.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Low for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 7.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—4e; Rodman—4s; Fox—3e

Prime farmland category: Not prime farmland

Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

735E2—Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded

Setting

Landform: Stream terraces

Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent

Rodman and similar soils: 31 percent

Fox and similar soils: 29 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 3.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits

Drainage class: Excessively drained

Slowest permeability within a depth of 40 inches: Moderately rapid

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 2.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Low for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 7.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—6e; Rodman—6s; Fox—4e

Prime farmland category: Not prime farmland

Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

Derinda Series

Drainage class: Moderately well drained

Landform: Hillslopes

Parent material: Thin layer of loess over residuum derived from calcareous shale

Slope range: 5 to 18 percent

Taxonomic classification: Fine, mixed, active, mesic Oxyaquic Hapludalfs

Typical Pedon

Derinda silt loam, 5 to 10 percent slopes, eroded; at an elevation of 780 feet (238 meters); 480 feet east and 2,060 feet north of the southwest corner of sec. 32, T. 26 N., R. 6 E.; Stephenson County, Illinois; USGS Boone Branch topographic quadrangle; lat. 42 degrees 12 minutes 14 seconds N. and long. 89 degrees 50 minutes 35 seconds W., NAD 27:

Ap—0 to 7 inches (0 to 18 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; many roots; few distinct light gray (10YR 7/1 and 7/2) (dry) silt coatings on faces of peds; few fine faint black (10YR 2/1) iron-manganese oxide concretions throughout; slightly acid; abrupt smooth boundary.

BE—7 to 12 inches (18 to 30 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common roots; few very dark grayish brown (10YR 3/2) and dark grayish brown (10YR 4/2) worm channel fillings; slightly acid; clear smooth boundary.

Bt1—12 to 18 inches (30 to 46 cm); brown (10YR 4/3) silty clay loam; moderate very fine and fine subangular blocky structure; firm; common roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron-manganese oxide in the matrix; few fine distinct black (10YR 2/1) iron-manganese oxide concretions throughout; few small chert fragments; slightly acid; clear smooth boundary.

2Bt2—18 to 23 inches (46 to 58 cm); variegated grayish brown (10YR 5/2) and yellowish brown (10YR 5/4) silty clay; moderate fine and medium prismatic structure parting to strong fine and medium angular blocky; firm; common roots; many distinct dark gray (10YR 4/1) clay films on faces of peds; common fine distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron-manganese oxide in the matrix; many fine distinct black (10YR 2/1) iron-manganese oxide concretions throughout; few small chert fragments; neutral; clear smooth boundary.

2BCt—23 to 25 inches (58 to 64 cm); variegated brownish yellow (10YR 6/6), yellow (10YR 7/8), and strong brown (7.5YR 5/6 and 5/8) loam; material appears to be mainly disintegrated soft limestone; weak medium angular blocky structure; very friable; few roots; many distinct dark grayish brown (10YR 4/2) clay films in root channels; many fine prominent black (10YR 2/1) iron-manganese oxide concretions throughout; slightly alkaline; clear smooth boundary.

2Cr—25 to 60 inches (64 to 152 cm); gray (5Y 6/1), pale olive (5Y 6/3), dark reddish gray (10R 4/1), reddish gray (10R 5/1), and weak red (10R 5/2) clay shale; spots of white (10YR 8/1) lime in the pale olive (5Y 6/3) zones; few brownish yellow (10YR 6/6) to yellow (10YR 7/8) limestone slabs 2 to 3 inches (5 to 8 cm) thick are just below the 2BCt horizon in a discontinuous pattern; weak coarse angular

blocky inherited rock structure; extremely firm; few roots in the upper part; 5 percent limestone gravel 25 to 75 mm in diameter; slightly alkaline.

Range in Characteristics

Depth to paralithic or lithic contact: 20 to 40 inches (51 to 102 cm)

Depth to residuum derived from shale: 15 to 30 inches (38 to 76 cm)

Ap or A horizon(s):

Hue—10YR

Value—4

Chroma—2 to 4

Texture—silt loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam

2Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—2 to 6

Texture—silty clay, clay, or silty clay loam

417C2—Derinda silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

Derinda and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have till above the bedrock
- Soils that have more than 30 inches or less than 15 inches of loess at the surface

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam
- Soils that have limestone bedrock at a depth of more than 60 inches

Properties and Qualities of the Derinda Soil

Parent material: Thin layer of loess over residuum derived from calcareous shale

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Impermeable

Permeability below a depth of 60 inches: Impermeable or very slow

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Available water capacity: About 4.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

417C3—Derinda silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

Derinda and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have till above the bedrock
- Soils that have more than 30 inches or less than 15 inches of loess at the surface

Dissimilar soils:

- Soils that have limestone bedrock at a depth of more than 60 inches

Properties and Qualities of the Derinda Soil

Parent material: Thin layer of loess over residuum derived from calcareous shale

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Impermeable

Permeability below a depth of 60 inches: Impermeable or very slow

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Available water capacity: About 4.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 1.5 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

417D2—Derinda silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

Derinda and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have till above the bedrock
- Soils that have more than 30 inches or less than 15 inches of loess at the surface

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam
- Soils that have limestone bedrock at a depth of more than 60 inches

Properties and Qualities of the Derinda Soil

Parent material: Thin layer of loess over residuum derived from calcareous shale

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Impermeable

Permeability below a depth of 60 inches: Impermeable or very slow

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Available water capacity: About 4.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Very high

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Dickinson Series

Drainage class: Well drained

Landform: Stream terraces and outwash plains

Parent material: Eolian sands; sandy or loamy alluvium from glacial outwash

Slope range: 2 to 10 percent

Taxonomic classification: Coarse-loamy, mixed, superactive, mesic Typic Hapludolls

Taxadjunct features: The Dickinson soil in map unit 87C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a coarse-loamy, mixed, superactive, mesic Dystric Eutrudept.

Typical Pedon

Dickinson sandy loam, 0 to 2 percent slopes (fig. 4); at an elevation of 630 feet (192 meters); 360 feet north and 1,720 feet west of the center of sec. 17, T. 17 N., R. 6 E.; Bureau County, Illinois; USGS Mineral topographic quadrangle; lat. 41 degrees 27 minutes 37 seconds N. and long. 89 degrees 50 minutes 09 seconds W., NAD 27:

Ap—0 to 8 inches (0 to 20 cm); very dark brown (10YR 2/2) sandy loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; very friable; few fine roots; moderately acid; abrupt smooth boundary.

A1—8 to 15 inches (20 to 38 cm); very dark brown (10YR 2/2) sandy loam, dark grayish brown (10YR 4/2) dry; weak medium subangular blocky structure; very friable; few fine roots; moderately acid; clear smooth boundary.



Figure 4.—A profile of a Dickinson soil.

A2—15 to 20 inches (38 to 51 cm); very dark grayish brown (10YR 3/2) sandy loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure; very friable; few fine roots; common very dark brown (10YR 2/2) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bw—20 to 31 inches (51 to 79 cm); brown (10YR 4/3) sandy loam; weak medium prismatic structure parting to weak medium subangular blocky; very friable; few fine roots; many distinct dark brown (10YR 3/3) organic coatings on faces of peds; slightly acid; clear smooth boundary.

BCt—31 to 36 inches (79 to 91 cm); yellowish brown (10YR 5/6) loamy sand; weak medium prismatic structure parting to weak medium subangular blocky; very friable; common distinct brown (10YR 4/3) clay bridging between sand grains; slightly acid; clear smooth boundary.

BC—36 to 47 inches (91 to 119 cm); yellowish brown (10YR 5/6) sand; weak coarse prismatic structure; very friable; moderately acid; clear smooth boundary.

C—47 to 60 inches (119 to 152 cm); yellowish brown (10YR 5/6) sand; single grain; loose; strong brown (7.5YR 5/6) bands $\frac{1}{2}$ inch to 2 inches thick at depths of 52, 56, and 58 inches; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 24 inches (18 to 61 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—sandy loam

Bw horizon:

Hue—10YR

Value—3 to 5

Chroma—2 to 4

Texture—sandy loam or fine sandy loam

BC and/or C horizon(s):

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—loamy sand, sand, loamy fine sand, or fine sand

87B—Dickinson sandy loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains and stream terraces

Position on the landform: Summits and shoulders

Map Unit Composition

Dickinson and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a surface layer of loamy sand
- Soils that have more silt in the subsoil
- Soils that have more sand in the subsoil
- Soils that have limestone bedrock at a depth of 40 to 60 inches

Dissimilar soils:

- The somewhat poorly drained Millbrook soils in shallow depressions and drainageways
- The somewhat poorly drained Hoopeston soils on summits

Properties and Qualities of the Dickinson Soil*Parent material:* Eolian sands and/or sandy alluvium and/or loamy alluvium*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderately rapid*Permeability below a depth of 60 inches:* Rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 5.9 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 1.0 to 2.0 percent*Shrink-swell potential:* Low*Ponding:* None*Flooding:* None*Potential for frost action:* Moderate*Hazard of corrosion:* Low for steel and moderate for concrete*Surface runoff class:* Very low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Moderately high***Interpretive Groups****Land capability classification:* 2e*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric**87C2—Dickinson sandy loam, 5 to 10 percent slopes, eroded*****Setting****Landform:* Dunes*Position on the landform:* Backslopes***Map Unit Composition***

Dickinson and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent*Similar soils:*

- Soils that have a surface layer of loamy sand
- Soils that have more silt in the subsoil
- Soils that have more sand in the subsoil
- Soils that have limestone bedrock at a depth of 40 to 60 inches

Dissimilar soils:

- The somewhat poorly drained Millbrook soils in shallow depressions and drainageways
- The somewhat poorly drained Hoopeston soils on summits

Properties and Qualities of the Dickinson Soil*Parent material:* Eolian sands*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderately rapid

Permeability below a depth of 60 inches: Rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 5.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 2.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Low for steel and moderate for concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Moderately high

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Dodgeville Series

Drainage class: Well drained
Landform: Hillslopes
Parent material: Loess and clayey residuum derived from dolomite
Slope range: 5 to 18 percent
Taxonomic classification: Fine-silty over clayey, mixed, superactive, mesic Typic Argiudolls
Taxadjunct features: The Dodgeville soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-silty over clayey, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Dodgeville silt loam, on a northeast-facing, convex slope of 8 percent, in a cultivated field; at an elevation of about 1,165 feet (355 meters); about 1,320 feet west and 820 feet north of the southeast corner of sec. 22, T. 6 N., R. 4 E.; Iowa County, Wisconsin; USGS Jonesdale topographic quadrangle; lat. 42 degrees 58 minutes 32 seconds N. and long. 90 degrees 00 minutes 03 seconds W., NAD 83:

- Ap—0 to 7 inches (0 to 18 cm); very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine and fine subangular blocky structure; friable; many fine fibrous roots; many earthworm casts; slightly acid; abrupt smooth boundary.
- A—7 to 13 inches (18 to 33 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thick platy structure parting to moderate fine subangular blocky; friable; common fine fibrous roots; strongly acid; clear wavy boundary.
- BA—13 to 16 inches (33 to 41 cm); brown (10YR 4/3) and dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common fine fibrous roots; moderately acid; gradual wavy boundary.
- Bt1—16 to 23 inches (41 to 58 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium angular blocky structure; firm; common roots; few fine angular chert fragments; common faint clay films on faces of peds; moderately acid; gradual smooth boundary.

2Bt2—23 to 35 inches (58 to 89 cm); yellowish red (5YR 4/6) and reddish brown (5YR 4/4) clay; strong medium angular blocky structure; very firm; common distinct clay films on faces of peds; many very fine and fine angular chert fragments that increase in number with depth; moderately acid; gradual irregular boundary.

2R—35 to 60 inches (89 to 152 cm); partially weathered dolomite bedrock that is shattered in the upper part and has clay residuum in narrow, widely spaced rock fissures.

Range in Characteristics

Thickness of the solum: 24 to 40 inches (61 to 102 cm)

Ap and A horizons:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

BA horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 3

Texture—silt loam or silty clay loam

Bt horizon:

Hue—10YR

Value—3 to 5

Chroma—3 or 4

Texture—silty clay loam

Content of rock fragments—2 to 10 percent (0 to 5 percent are more than 3 inches in size)

2Bt horizon:

Hue—7.5YR, 5YR, or 2.5YR

Value—3 to 5

Chroma—3 to 5

Texture—silt loam or silty clay loam

Content of rock fragments—2 to 10 percent (0 to 5 percent are more than 3 inches in size)

40C2—Dodgeville silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Shoulders and backslopes

Map Unit Composition

Dodgeville and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have bedrock at a depth of less than 20 inches or more than 40 inches
- Soils that have a thin layer of till
- Soils that have less than 10 inches of residuum

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Dodgeville Soil

Parent material: Loess and/or clayey residuum derived from dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow to moderate

Depth to restrictive feature: 24 to 40 inches to paralithic bedrock

Available water capacity: About 5.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 5.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

40D2—Dodgeville silt loam, 10 to 18 percent slopes, eroded***Setting***

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

Dodgeville and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils that have bedrock at a depth of less than 20 inches or more than 40 inches
- Soils that have a thin layer of till
- Soils that have less than 10 inches of residuum

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Dodgeville Soil

Parent material: Loess and/or clayey residuum derived from dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow to moderate

Depth to restrictive feature: 24 to 40 inches to paralithic bedrock

Available water capacity: About 4.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 5.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Dorchester Series

Drainage class: Well drained

Landform: Flood plains

Parent material: Alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, calcareous, mesic Typic Udifluvents

Typical Pedon

Dorchester silt loam, 0 to 2 percent slopes; 1,600 feet east and 1,650 feet south of the northwest corner of sec. 36, T. 10 N., R. 6 E.; Peoria County, Illinois; USGS Oak Hill topographic quadrangle; lat. 40 degrees 48 minutes 31 seconds N. and long. 89 degrees 46 minutes 11 seconds W., NAD 27:

Ap—0 to 9 inches (0 to 23 cm); dark grayish brown (10YR 4/2) silt loam, gray (10YR 6/1) dry; weak medium platy structure parting to weak very fine subangular blocky; friable; few very fine roots; few faint very dark grayish brown (10YR 3/2) organic stains on faces of peds; slightly effervescent; slightly alkaline; abrupt smooth boundary.

C—9 to 32 inches (23 to 81 cm); stratified dark grayish brown (10YR 4/2), grayish brown (10YR 5/2), brown (10YR 5/3), very dark gray (10YR 3/1), and very dark grayish brown (10YR 3/2) silt loam; few thin strata of loam; massive with moderate thin bedding planes as a result of stratification; friable; few very fine roots; slightly effervescent; slightly alkaline; abrupt smooth boundary.

Ab1—32 to 43 inches (81 to 109 cm); black (10YR 2/1) silt loam; weak fine subangular blocky structure parting to weak very fine granular; friable; slightly alkaline; gradual smooth boundary.

Ab2—43 to 60 inches (109 to 152 cm); very dark gray (10YR 3/1) silt loam; moderate fine subangular blocky structure; friable; many faint black (10YR 2/1) organic stains on faces of peds; few fine distinct brown (10YR 4/3) redoximorphic features below a depth of 48 inches; slightly alkaline.

Range in Characteristics

Thickness of the solum: Less than 10 inches (25 cm)

Depth to buried horizon: 20 to 45 inches (51 to 114 cm)

Ap or A horizon:

Hue—10YR

Value—3 or 4

Chroma—2 or 3
Texture—silt loam

C horizon:

Hue—10YR
Value—3 to 5
Chroma—2 or 3
Texture—silt loam; thin strata of loam in some pedons

Ab horizon:

Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—clay loam, silt loam, or silty clay loam

8239A—Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Dorchester and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have cobbly dolomite and chert within a depth of 60 inches
- Soils that are frequently flooded

Dissimilar soils:

- The somewhat poorly drained Radford and poorly drained Sawmill soils on flood plains

Properties and Qualities of the Dorchester Soil

Parent material: Alluvium

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 13.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Moderate

Ponding: None

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

Drummer Series

Drainage class: Poorly drained

Landform: Outwash plains

Parent material: Loess over outwash

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Endoaquolls

Typical Pedon

Drummer silty clay loam, 0 to 2 percent slopes; at an elevation of 715 feet (218 meters); 1,600 feet east and 300 feet north of the southwest corner of sec. 19, T. 19 N., R. 9 E.; Champaign County, Illinois; USGS Urbana topographic quadrangle; lat. 40 degrees 05 minutes 04 seconds N. and long. 88 degrees 13 minutes 58 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; weak fine granular structure; firm; many fine roots; moderately acid; clear smooth boundary.
- A—7 to 14 inches (18 to 36 cm); black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure parting to weak fine granular; firm; many fine and medium roots; slightly acid; clear smooth boundary.
- BA—14 to 19 inches (36 to 48 cm); very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; moderate fine and medium subangular blocky structure; firm; many fine and medium roots; few fine faint very dark grayish brown (2.5Y 3/2) masses of iron and manganese accumulation in the matrix; slightly acid; gradual smooth boundary.
- Bg—19 to 25 inches (48 to 64 cm); dark gray (10YR 4/1) silty clay loam; moderate fine prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; many worm holes; neutral; gradual smooth boundary.
- Btg1—25 to 32 inches (64 to 81 cm); grayish brown (2.5Y 5/2) silty clay loam; weak fine and medium prismatic structure parting to moderate fine angular blocky; firm; many fine roots; common distinct dark gray (N 4/) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; neutral; gradual wavy boundary.
- Btg2—32 to 41 inches (81 to 104 cm); gray (N 5/) silty clay loam; weak medium prismatic structure parting to weak medium angular blocky; firm; few fine roots; few distinct dark gray (N 4/) clay films on faces of peds; many medium prominent yellowish brown (10YR 5/4) masses of iron and manganese accumulation in the matrix; neutral; clear wavy boundary.
- 2Btg3—41 to 47 inches (104 to 119 cm); gray (N 5/) loam; weak coarse subangular blocky structure; friable; few fine roots; few distinct dark gray (10YR 4/1) clay films on faces of peds; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 4 percent fine gravel; neutral; abrupt wavy boundary.
- 2Cg—47 to 60 inches (119 to 152 cm); dark gray (10YR 4/1), stratified loam and sandy loam; massive; friable; many medium prominent olive brown (2.5Y 4/4) masses of iron and manganese accumulation in the matrix; many medium distinct gray (N 5/) iron depletions in the matrix; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 22 inches (25 to 56 cm)

Thickness of the loess: 40 to 60 inches (102 to 152 cm)

Depth to free carbonates: 40 to 65 inches (102 to 165 cm)

Thickness of the solum: 42 to 65 inches (107 to 165 cm)

Ap or A horizon:

Hue—10YR, 2.5Y, 5Y, or N
 Value—2 to 3
 Chroma—0 to 2
 Texture—silty clay loam

Bg or Btg horizon:

Hue—10YR, 2.5Y, 5Y, or N
 Value—3 to 6
 Chroma—0 to 4
 Texture—silty clay loam, silty clay, or silt loam

2Bg or 2Btg horizon:

Hue—7.5YR to 5Y or N
 Value—4 to 6
 Chroma—0 to 2
 Texture—loam or silt loam with strata of loamy sand, sandy loam, clay loam, sandy clay loam, or silty clay loam

2C horizon:

Hue—7.5YR to 5Y or N
 Value—4 to 7
 Chroma—0 to 8
 Texture—stratified loam, silt loam, clay loam, sandy clay loam, silty clay loam, or sandy loam

152A—Drummer silty clay loam, 0 to 2 percent slopes***Setting****Landform:* Outwash plains*Position on the landform:* Toeslopes***Map Unit Composition***

Drummer and similar soils: 92 percent

Dissimilar soils: 8 percent

Components of Minor Extent*Similar soils:*

- Soils that have less than 40 inches or more than 60 inches of silty material over outwash
- Soils that have more sand in the subsoil
- Soils that have calcareous material at the surface
- Soils that have a substratum of loamy till

Dissimilar soils:

- Soils that have a seasonal high water table at a depth of more than 2 feet
- Moderately well drained soils on summits and backslopes
- The well drained Plano soils on summits
- The well drained Proctor soils on summits and shoulders

Properties and Qualities of the Drummer Soil*Parent material:* Loess over outwash*Drainage class:* Poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate*Depth to restrictive feature:* More than 80 inches

Available water capacity: About 12.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 5.0 to 7.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.2 foot, January through May

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

Dubuque Series

Drainage class: Well drained

Landform: Hillslopes

Parent material: Loess over a thin layer of residuum derived from limestone

Slope range: 5 to 18 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Dubuque silt loam, 10 to 18 percent slopes, eroded; 2,600 feet west and 2,600 feet north of the southeast corner of sec. 28, T. 29 N., R. 2 E.; Jo Daviess County, Illinois; USGS Scales Mound West topographic quadrangle; lat. 42 degrees 28 minutes 56 seconds N. and long. 90 degrees 17 minutes 33 seconds W., NAD 27:

Ap—0 to 7 inches (0 to 18 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium and fine granular structure; friable; common very fine roots; fragments of yellowish brown (10YR 5/4) subsoil mixed in the lower part; neutral; clear smooth boundary.

Bt1—7 to 13 inches (18 to 33 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable; common very fine roots; common fragments of dark grayish brown (10YR 4/2) mixed in the upper part; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; gradual smooth boundary.

Bt2—13 to 20 inches (33 to 51 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; gradual smooth boundary.

Bt3—20 to 29 inches (51 to 74 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; neutral; gradual smooth boundary.

2Bt4—29 to 33 inches (74 to 84 cm); brown (7.5YR 5/4) and strong brown (7.5YR 5/6) silty clay; moderate medium and fine angular blocky structure; firm; many distinct brown (7.5YR 4/2) clay films on faces of peds; neutral; abrupt smooth boundary.

2R—33 to 60 inches (84 to 152 cm); hard dolomitic limestone with an inch of soft yellow (10YR 8/6) fragmented limestone in the upper part.

Range in Characteristics

Depth to dolomitic limestone: 20 to 40 inches (51 to 102 cm)

A or Ap horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 3

Texture—silt loam

E horizon (where present):

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam or silty clay loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—silt loam or silty clay loam

2Bt horizon:

Hue—5YR, 7.5YR, or 10YR

Value—4 to 6

Chroma—3 to 8

Texture—silty clay or clay

29C2—Dubuque silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Shoulders and backslopes

Map Unit Composition

Dubuque and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have bedrock at a depth of less than 20 inches or more than 40 inches

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Dubuque Soil

Parent material: Loess over a thin layer of residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Impermeable

Permeability below a depth of 60 inches: Impermeable or very slow

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Available water capacity: About 5.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

29D2—Dubuque silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

Dubuque and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have bedrock at a depth of less than 20 inches or more than 40 inches

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Dubuque Soil

Parent material: Loess over a thin layer of residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Impermeable or very slow

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Available water capacity: About 5.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Durand Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Thin layer of loess over a paleosol that formed in till

Slope range: 2 to 10 percent

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Durand soil in map unit 416C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Durand silt loam, 2 to 5 percent slopes; 600 feet south and 405 feet east of the northwest corner of sec. 30, T. 28 N., R. 9 E.; Stephenson County, Illinois; USGS Dakota topographic quadrangle; lat. 42 degrees 24 minutes 08 seconds N. and long. 89 degrees 30 minutes 51 seconds W., NAD 27:

- Ap—0 to 9 inches (0 to 23 cm); very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) dry; moderate fine subangular blocky structure parting to moderate medium granular; friable; many fine and medium roots; layer compacted as a result of tillage practices; slightly acid; abrupt smooth boundary.
- AB—9 to 13 inches (23 to 33 cm); 70 percent dark brown (10YR 3/3) and 30 percent very dark grayish brown (10YR 3/2) silt loam; dark brown (10YR 3/3) crushed, brown (10YR 5/3) dry; moderate fine and medium granular structure; friable; many fine and medium roots; slightly acid; clear smooth boundary.
- Bt1—13 to 21 inches (33 to 53 cm); 90 percent dark yellowish brown (10YR 4/4) and 10 percent brown (10YR 4/3) silty clay loam; dark yellowish brown (10YR 4/4) crushed; moderate fine subangular blocky structure; friable; many fine and medium roots; common faint dark brown (10YR 3/3) organo-clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt2—21 to 26 inches (53 to 66 cm); brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; firm; common fine and medium roots; common faint brown (7.5YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt3—26 to 35 inches (66 to 89 cm); brown (7.5YR 4/4) clay loam; moderate fine and medium subangular blocky structure; firm; common fine and medium roots; common faint reddish brown (5YR 4/3) clay films on faces of peds; 2 percent rounded gravel; moderately acid; clear smooth boundary.
- 2Bt4—35 to 47 inches (89 to 119 cm); reddish brown (5YR 4/4) clay loam; moderate medium and coarse subangular and angular blocky structure; firm; few fine and medium roots; common faint reddish brown (5YR 4/3) clay films on faces of peds; 5 percent rounded gravel; moderately acid; clear smooth boundary.
- 2Bt5—47 to 66 inches (119 to 168 cm); brown (7.5YR 4/4) clay loam; moderate medium and coarse subangular and angular blocky structure; firm; few fine and medium roots; common faint reddish brown (5YR 4/4) clay films on faces of peds; occasional streaks of reddish brown (2.5YR 4/4) clay residuum derived from dolomitic limestone; 5 percent rounded gravel; slightly acid; clear smooth boundary.
- 2BC—66 to 77 inches (168 to 196 cm); brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; friable; few fine and medium roots; 7 percent rounded gravel; slightly acid; abrupt wavy boundary.

2C—77 to 86 inches (196 to 218 cm); variegated yellowish brown (10YR 5/4) and light yellowish brown (10YR 6/4) sandy loam; massive; friable; 10 percent rounded gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches (18 to 51 cm)

Thickness of the loess: 15 to 30 inches (38 to 76 cm)

Thickness of the solum: 48 to 90 inches (122 to 229 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—silt loam or silty clay loam

2Bt horizon:

Hue—7.5YR, 5YR, or 2.5YR

Value—4 or 5

Chroma—4 to 6

Texture—clay loam, sandy clay loam, loam, or sandy loam or the gravelly analogs of these textures

2C horizon:

Hue—10YR or 7.5YR

Value—5 or 6

Chroma—4 to 6

Texture—gravelly sandy loam, sandy loam, or loam

416B—Durand silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Durand and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a thinner and lighter colored surface layer
- Soils that have calcareous material at a depth of less than 48 inches
- Soils that have more sand in the upper part of the subsoil

Dissimilar soils:

- Soils that have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Durand Soil

Parent material: Thin layer of loess over a paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

416C2—Durand silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Durand and similar soils: 90 percent
 Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a thinner and lighter colored surface layer
- Soils that have calcareous material at a depth of less than 48 inches
- Soils that have more sand in the upper part of the subsoil
- Soils that have less than 15 inches of loess over the underlying till

Dissimilar soils:

- Soils that have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Durand Soil

Parent material: Thin layer of loess over a paleosol that formed in till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Edgington Series

Drainage class: Poorly drained

Landform: Ground moraines

Parent material: Loess

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Edgington silt loam, 0 to 2 percent slopes; 222 feet west and 45 feet north of the southeast corner of NE¹/₄ sec. 5, T. 25 N., R. 7 E.; Carroll County, Illinois; USGS Shannon topographic quadrangle; lat. 42 degrees 11 minutes 30.1 seconds N. and long. 89 degrees 42 minutes 31 seconds W., NAD 27:

- A1—0 to 16 inches (0 to 41 cm); black (10YR 2/1) silt loam; moderate medium granular structure; friable; many roots; slightly acid; gradual smooth boundary.
- A2—16 to 20 inches (41 to 51 cm); very dark brown (10YR 2/2) and very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; many roots; strongly acid; clear smooth boundary.
- E—20 to 31 inches (51 to 79 cm); dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) silt loam; weak medium platy structure parting to weak fine granular; friable; common roots; few fine distinct dark yellowish brown (10YR 4/4) iron masses in the matrix; common black (10YR 2/1) iron-manganese oxide nodules and concretions throughout; strongly acid; clear smooth boundary.
- Btg1—31 to 35 inches (79 to 89 cm); dark gray (5Y 4/1) silty clay loam; moderate fine subangular blocky structure; friable; few roots; few dark gray (10YR 4/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/4) iron masses in the matrix; common prominent black (10YR 2/1) iron-manganese oxide nodules and concretions throughout; strongly acid; gradual smooth boundary.
- Btg2—35 to 41 inches (89 to 104 cm); gray (10YR 5/1) silty clay loam; weak medium prismatic structure parting to moderate strong fine and medium angular blocky; firm; few roots; common faint dark gray (10YR 4/1) clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/4) and few fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; common black (10YR 2/1) iron-manganese oxide nodules and concretions throughout; moderately acid; gradual smooth boundary.
- Btg3—41 to 49 inches (104 to 124 cm); gray (10YR 5/1) silty clay loam; weak medium and coarse prismatic structure parting to strong medium angular blocky; firm; few roots; common faint dark gray (10YR 4/1) and very dark gray (10YR 3/1) clay films on faces of peds; common fine prominent brown (7.5YR 4/4) and yellowish brown (10YR 5/6) iron masses in the matrix; common black (10YR 2/1) iron-manganese oxide nodules and concretions throughout; moderately acid; clear smooth boundary.
- Btg4—49 to 55 inches (124 to 140 cm); gray (10YR 5/1) and light brownish gray (10YR 6/2) silty clay loam; weak medium and coarse angular blocky structure; firm; few roots; common faint dark gray (10YR 4/1) clay films on faces of peds; many fine

prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) iron masses in the matrix; common black (10YR 2/1) iron-manganese oxide nodules and concretions throughout; very dark gray (10YR 3/1) krotovina crossing the horizon; moderately acid; gradual smooth boundary.

Cg—55 to 60 inches (140 to 152 cm); gray (10YR 5/1), yellowish brown (10YR 5/6), and light brownish gray (10YR 6/2) silt loam; massive; friable; few distinct dark brown (7.5YR 3/2) redoximorphic concentrations throughout; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 15 to 24 inches (38 to 61 cm)

Thickness of the solum: More than 42 inches (107 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

E or Eg horizon:

Hue—10YR

Value—4 or 5

Chroma—1 or 2

Texture—silt loam

Bt or Btg horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 or 2

Texture—silty clay loam or silt loam

C or Cg horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—1 to 6

Texture—silty clay loam or silt loam

272A—Edgington silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Toeslopes

Map Unit Composition

Edgington and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that are underlain by loamy or sandy drift at a depth of 40 to 60 inches; on terraces
- Soils that formed in water-laid deposits instead of loess

Dissimilar soils:

- The well drained Osco soils in the higher positions on the landscape

Properties and Qualities of the Edgington Soil

Parent material: Loess

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.5 to 6.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and most likely period of ponding: 0.2 foot, all year

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

Elburn Series

Drainage class: Somewhat poorly drained

Landform: Outwash plains

Parent material: Loess over outwash

Slope range: 0 to 5 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Elburn silt loam, 0 to 2 percent slopes; at an elevation of 820 feet (250 meters); 1,540 feet south and 308 feet west of the northeast corner of sec. 30, T. 15 N., R. 8 E.; Bureau County, Illinois; USGS Wyandot topographic quadrangle; lat. 41 degrees 15 minutes 32 seconds N. and long. 89 degrees 36 minutes 27 seconds W., NAD 27:

Ap—0 to 9 inches (0 to 23 cm); very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; common fine roots throughout; slightly acid; abrupt smooth boundary.

A—9 to 14 inches (23 to 36 cm); very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate very fine subangular blocky structure; friable; common fine roots throughout; few prominent very dark gray (10YR 3/1) organic coatings on faces of peds; slightly acid; clear smooth boundary.

Bt1—14 to 23 inches (36 to 58 cm); brown (10YR 4/3) silty clay loam; moderate very fine and fine subangular blocky structure; friable; few fine roots between peds; few prominent very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few prominent dark brown (10YR 3/3) clay films on faces of peds; few fine black (10YR 2/1) concretions of iron-manganese oxide throughout; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.

- Bt2**—23 to 31 inches (58 to 79 cm); yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; friable; few fine roots between peds; common prominent brown (10YR 4/3) and dark brown (10YR 3/3) clay films on faces of peds; few fine black (10YR 2/1) concretions of iron-manganese oxide throughout; many fine distinct grayish brown (10YR 5/2) iron depletions; many fine distinct yellowish brown (10YR 5/6) iron masses in the matrix; slightly acid; clear smooth boundary.
- Bt3**—31 to 42 inches (79 to 107 cm); light olive brown (2.5Y 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots between peds; many prominent grayish brown (2.5Y 5/2) clay films on faces of peds; few fine black (10YR 2/1) concretions of iron-manganese oxide throughout; common fine distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) iron masses in the matrix; neutral; clear smooth boundary.
- Bt4**—42 to 52 inches (107 to 132 cm); light olive brown (2.5Y 5/4) silt loam; weak medium prismatic structure parting to moderate coarse subangular blocky; friable; few fine roots between peds; common prominent grayish brown (2.5Y 5/2) clay films on faces of peds; few fine black (10YR 2/1) concretions of iron-manganese oxide throughout; common medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; common fine distinct yellowish brown (10YR 5/6) iron masses in the matrix; neutral; clear smooth boundary.
- 2BC**—52 to 60 inches (132 to 152 cm); light olive brown (2.5Y 5/4) sandy loam; weak coarse subangular blocky structure; loose; few distinct brown (10YR 4/3) clay films on faces of peds; few fine black (10YR 2/1) concretions of iron-manganese oxide throughout; common fine distinct yellowish brown (10YR 5/6) iron masses in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 18 inches (25 to 46 cm)

Thickness of the loess: 40 to 60 inches (102 to 152 cm)

Thickness of the solum: 50 to 65 inches (127 to 165 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

Bt horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 or 5

Chroma—2 to 4

Texture—silty clay loam or silt loam

2Btg, 2BCg, 2Bg, 2Bt, and/or 2BC horizon(s):

Hue—7.5YR to 5Y

Value—4 to 6

Chroma—2 to 8

Texture—loam, silt loam, sandy loam, clay loam, or silty clay loam

2C horizon (where present):

Hue—7.5YR to 5Y

Value—4 to 6

Chroma—2 to 8

Texture—loam or sandy loam with strata of loamy sand, sand, or silt loam

198A—Elburn silt loam, 0 to 2 percent slopes***Setting***

Landform: Outwash plains

Position on the landform: Footslopes

Map Unit Composition

Elburn and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent***Similar soils:***

- Soils that have a thinner dark surface layer
- Soils that have more than 60 inches of silty material over the outwash

Dissimilar soils:

- The poorly drained Sable soils in depressions
- The poorly drained Drummer soils on toeslopes
- The well drained Parkway soils on summits and shoulders
- The well drained Plano soils on summits

Properties and Qualities of the Elburn Soil

Parent material: Loess over outwash

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 5.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 1.0 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

198B—Elburn silt loam, 2 to 5 percent slopes***Setting***

Landform: Outwash plains

Position on the landform: Footslopes

Map Unit Composition

Elburn and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a thinner dark surface layer
- Soils that have more than 60 inches of silty material over the outwash

Dissimilar soils:

- The poorly drained Sable soils in depressions and drainageways

Properties and Qualities of the Elburn Soil

Parent material: Loess over outwash

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 5.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 1.0 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

Elco Series

Drainage class: Moderately well drained

Landform: Ground moraines

Parent material: Loess over a paleosol that formed in till

Slope range: 5 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Elco silt loam, 5 to 10 percent slopes; 2,520 feet east and 2,200 feet south of the northwest corner of sec. 35, T. 15 N., R. 4 W.; Sangamon County, Illinois; USGS New City, Illinois, topographic quadrangle; lat. 39 degrees 42 minutes 30 seconds N. and long. 89 degrees 30 minutes 28 seconds W., NAD 27:

Ap—0 to 4 inches (0 to 10 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; strong very fine granular structure; friable; many roots throughout; slightly acid; clear smooth boundary.

E—4 to 12 inches (10 to 30 cm); brown (10YR 4/3) silt loam; weak thin platy structure parting to moderate very fine granular; friable; many distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds and linings in pores; few distinct yellowish brown (10YR 5/4) flecks and fragments of subsoil material; slightly acid; clear smooth boundary.

- BE—12 to 15 inches (30 to 38 cm); yellowish brown (10YR 5/4) silt loam; moderate very fine and fine subangular blocky structure; friable; few faint dark brown (10YR 3/3) organo-clay films and very few faint dark grayish brown (10YR 4/2) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) clay depletions on faces of peds; few fine black (5YR 2.5/1) iron-manganese oxide concretions throughout; slightly acid; clear smooth boundary.
- Bt—15 to 26 inches (38 to 66 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; few fine distinct grayish brown (10YR 5/2) iron depletions along micropores; few fine black (5YR 2.5/1) iron-manganese oxide concretions throughout; slightly acid; clear smooth boundary.
- 2Btg1—26 to 39 inches (66 to 99 cm); grayish brown (2.5Y 5/2) and yellowish brown (10YR 5/6) silty clay loam; moderate medium and coarse subangular and angular blocky structure; firm; common distinct olive brown (2.5Y 4/4) and brown (10YR 4/3) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common very fine black (5YR 2.5/1) iron-manganese oxide concretions throughout; slightly acid; gradual smooth boundary.
- 3Btg2—39 to 55 inches (99 to 140 cm); grayish brown (2.5Y 5/2) and yellowish brown (10YR 5/6) silty clay; weak medium prismatic structure parting to moderate coarse subangular and angular blocky; firm; many distinct gray (5Y 5/1) clay films on faces of peds; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; few fine black (5YR 2.5/1) iron-manganese oxide concretions throughout; slightly acid; clear smooth boundary.
- 3Btg3—55 to 70 inches (140 to 178 cm); grayish brown (2.5Y 5/2) silty clay; moderate fine and medium subangular and angular blocky structure; friable; common distinct gray (5Y 5/1) clay films on faces of peds and in pores; common fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; few fine black (5YR 2.5/1) iron-manganese oxide concretions throughout; slightly acid; clear smooth boundary.
- 3Btg4—70 to 80 inches (178 to 203 cm); gray (5Y 5/1) silty clay; moderate coarse subangular blocky structure; firm; common distinct greenish gray (5GY 5/1) clay films on faces of peds; few distinct black (10YR 2/1) organic coatings in root channels and pores; many fine strong brown (7.5YR 4/6) masses of iron accumulation in the matrix; few fine black (5YR 2.5/1) iron-manganese oxide concretions throughout; slightly alkaline.

Range in Characteristics

Thickness of the loess: 20 to 40 inches (51 to 102 cm)

Depth to paleosol till: Less than 60 inches (152 cm)

Thickness of the solum: More than 48 inches (122 cm)

Ap or A horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 4

Texture—silt loam

Reaction—moderately acid to neutral

E horizon (where present):

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silt loam

Reaction—moderately acid to neutral

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—2 to 6

Texture—silty clay loam or silt loam

Reaction—strongly acid to slightly alkaline

2Bt or 2Btg and 3Bt or 3Btg horizons:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—3 to 6

Chroma—1 to 6

Texture—loam, clay loam, silty clay loam, silty clay, or clay

Reaction—strongly acid to slightly alkaline

119C2—Elco silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Elco and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have more than 40 inches of silty material over till
- Soils that have a seasonal high water table at a depth of 12 to 24 inches

Dissimilar soils:

- Westville soils, which have less than 20 inches of silty material over till
- The somewhat poorly drained Atlas soils on backslopes

Properties and Qualities of the Elco Soil

Parent material: Loess over a paleosol that formed in till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow or moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: High

Depth and months of the highest perched seasonal high water table: 2.0 feet,
February through April

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Eleroy Series

Drainage class: Moderately well drained

Landform: Hillslopes

Parent material: Loess over clayey residuum derived from calcareous shale

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalfs

Typical Pedon

Eleroy silt loam, 10 to 18 percent slopes, eroded; 825 feet east and 495 feet north of the center of sec. 1, T. 25 N., R. 5 E.; Carroll County, Illinois; USGS Boone Branch topographic quadrangle; lat. 42 degrees 11 minutes 28 seconds N. and long. 89 degrees 52 minutes 04 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; slightly acid; abrupt smooth boundary.
- E—7 to 12 inches (18 to 30 cm); grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium and thick platy structure parting to weak fine and medium granular; friable; slightly acid; clear wavy boundary.
- BE—12 to 15 inches (30 to 38 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; some light gray (10YR 7/2) (dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.
- Bt1—15 to 22 inches (38 to 56 cm); dark yellowish brown (10YR 4/4) silty clay loam; strong medium subangular blocky structure; firm; common faint brown (10YR 4/3) clay films on faces of peds; few very dark brown (10YR 2/2) iron-manganese oxides; moderately acid; gradual smooth boundary.
- Bt2—22 to 32 inches (56 to 81 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common faint brown (10YR 4/3) clay films on faces of peds; few medium faint yellowish brown (10YR 5/8) masses of iron-manganese oxide; moderately acid; gradual smooth boundary.
- 2Bt3—32 to 41 inches (81 to 104 cm); olive brown (2.5Y 4/3) silty clay loam; weak coarse subangular blocky structure; firm; common distinct dark grayish brown (10YR 4/2) clay films; few medium distinct yellowish brown (10YR 5/8) masses of iron-manganese oxide; 3 percent pebbles of igneous rock; slightly acid; abrupt smooth boundary.
- 2Cr—41 to 50 inches (104 to 127 cm); gray (5Y 6/1) clay shale; common coarse prominent light olive brown (2.5Y 5/4) stains of oxidized iron-manganese on fragment surfaces; massive; very firm; slightly alkaline.

Range in Characteristics

Thickness of the loess: 35 to 50 inches (89 to 127 cm)

Depth to bedrock: 40 to 55 inches (102 to 140 cm)

Ap or A horizon(s):

Hue—10YR

Value—4

Chroma—2 or 3

Texture—silt loam

E or BE horizon:

Hue—10YR
 Value—4 or 5
 Chroma—2 or 3
 Texture—silt loam or silty clay loam

Bt horizon:

Hue—7.5YR or 10YR
 Value—4 or 5
 Chroma—3 to 6
 Texture—silty clay loam

2Bt horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 or 5
 Chroma—2 to 4
 Texture—silty clay loam, silty clay, or clay

547B—Eleroy silt loam, 2 to 5 percent slopes***Setting****Landform:* Hillslopes*Position on the landform:* Summits and shoulders***Map Unit Composition***

Eleroy and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils that have a darker surface layer
- Soils that have till overlying the shale bedrock
- Soils that have less than 30 inches of loess on the surface

Dissimilar soils:

- The well drained Beaver Creek and somewhat poorly drained Orion soils in drainageways and on flood plains

Properties and Qualities of the Eleroy Soil*Parent material:* Loess over clayey residuum derived from calcareous shale*Drainage class:* Moderately well drained*Slowest permeability within a depth of 40 inches:* Impermeable*Permeability below a depth of 60 inches:* Very slow or slow*Depth to restrictive feature:* 40 to 60 inches to paralithic bedrock*Available water capacity:* About 8.2 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 1.0 to 3.0 percent*Shrink-swell potential:* Moderate*Depth and months of the highest perched seasonal high water table:* 2.0 feet,
February through April*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

547C2—Eleroy silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes and shoulders

Map Unit Composition

Eleroy and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have till overlying the shale bedrock
- Soils that have less than 30 inches of loess on the surface

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Eleroy Soil

Parent material: Loess over clayey residuum derived from calcareous shale

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Available water capacity: About 10.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 2.0 feet,
February through April

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Elizabeth Series

Drainage class: Somewhat excessively drained

Landform: Hillslopes

Parent material: Loamy material over dolostone

Slope range: 10 to 35 percent

Taxonomic classification: Loamy-skeletal, mixed, superactive, mesic Lithic Hapludolls

Typical Pedon

Elizabeth silt loam, 7 to 15 percent slopes; about 1,900 feet west and 560 feet south of the northeast corner of sec. 10, T. 27 N., R. 2 E.; Jo Daviess County, Illinois; USGS Hanover topographic quadrangle; lat. 42 degrees 21 minutes 16 seconds N. and long. 90 degrees 15 minutes 57 seconds W., NAD 83:

- A1—0 to 6 inches (0 to 15 cm); very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate medium granular structure; friable; many fine and very fine roots; less than 10 percent limestone cobbles; slightly alkaline; clear smooth boundary.
- A2—6 to 10 inches (15 to 25 cm); very dark grayish brown (10YR 3/2) cobbly silt loam, grayish brown (10YR 5/2) dry; moderate medium subangular blocky structure parting to moderate medium granular; friable; many fine and very fine roots; about 25 percent limestone cobbles; slightly effervescent; slightly alkaline; clear smooth boundary.
- A3—10 to 19 inches (25 to 48 cm); dark brown (10YR 3/3) extremely cobbly loam, brown (10YR 5/3) dry; moderate medium granular structure; friable; few fine and very fine roots; about 90 percent limestone cobbles (7 to 16 centimeters in the smallest dimension); slightly effervescent; slightly alkaline; diffuse wavy boundary.
- 2R—19 inches (48 cm); fractured dolomitic limestone bedrock; dark silt loam in the fractures in the upper 2 to 6 inches (5 to 15 cm).

Range in Characteristics

Thickness of the solum and depth to dolomitic limestone: 10 to 20 inches (25 to 51 cm)

A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam, loam, clay loam, or silty clay loam or the cobbly to extremely cobbly analogs of these textures

403D2—Elizabeth silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

Elizabeth and similar soils: 92 percent

Dissimilar components: 8 percent

Components of Minor Extent

Similar soils:

- Soils that have a thicker surface layer

- Soils that have a channery or flaggy surface layer
- Soils that have more clay in the subsoil

Dissimilar components:

- Soils that do not have bedrock within a depth of 20 inches; in positions similar to those of the Elizabeth soil
- Areas of rock outcrop

Properties and Qualities of the Elizabeth Soil

Parent material: Loamy material over dolostone

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow or moderately slow

Depth to restrictive feature: 7 to 20 inches to lithic bedrock

Available water capacity: About 1.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.5 to 5.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Low for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7s

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

**403F2—Elizabeth silt loam, 18 to 35 percent slopes,
eroded**

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

Elizabeth and similar soils: 90 percent

Dissimilar components: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a thicker surface layer
- Soils that have a channery or flaggy surface layer
- Soils that have more clay in the subsoil

Dissimilar components:

- Soils that do not have bedrock within a depth of 20 inches; in positions similar to those of the Elizabeth soil
- Areas of rock outcrop

Properties and Qualities of the Elizabeth Soil

Parent material: Loamy residuum derived from limestone and dolomite

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow or moderately slow

Depth to restrictive feature: 4 to 20 inches to lithic bedrock

Available water capacity: About 2.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.5 to 5.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Potential for frost action: Moderate

Hazard of corrosion: Low for steel and concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 7s

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Fayette Series

Drainage class: Well drained

Landform: Ground moraines and loess hills

Parent material: Loess

Slope range: 2 to 18 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fayette silt loam, 10 to 18 percent slopes, eroded; 2,100 feet north and 1,700 feet west of the southeast corner of sec. 31, T. 12 N., R. 3 W.; Warren County, Illinois; USGS Rozetta topographic quadrangle; lat. 40 degrees 59 minutes 13 seconds N. and long. 90 degrees 46 minutes 18 seconds W., NAD 27:

Ap—0 to 5 inches (0 to 13 cm); mixed dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/4) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; common fine roots throughout; moderately acid; clear smooth boundary.

EB—5 to 9 inches (13 to 23 cm); mixed brown (10YR 5/3) and yellowish brown (10YR 5/4) silt loam; weak medium platy structure parting to moderate fine subangular blocky; friable; common fine roots between peds; few faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt1—9 to 13 inches (23 to 33 cm); dark yellowish brown (10YR 4/4) silt loam; moderate fine and medium subangular blocky structure; friable; few fine roots between peds; common faint brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—13 to 27 inches (33 to 69 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; gradual smooth boundary.

- Bt3**—27 to 38 inches (69 to 97 cm); yellowish brown (10YR 5/4) silty clay loam; weak coarse prismatic structure parting to moderate medium subangular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few prominent dark brown (7.5YR 3/2) soft masses of iron-manganese oxide on faces of peds; moderately acid; gradual wavy boundary.
- BC**—38 to 55 inches (97 to 140 cm); yellowish brown (10YR 5/4) silt loam; moderate medium and coarse subangular blocky structure; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few distinct dark brown (7.5YR 3/2) soft masses of iron-manganese oxide on faces of peds; moderately acid; clear wavy boundary.
- C**—55 to 60 inches (140 to 152 cm); yellowish brown (10YR 5/4) silt loam; massive; friable; few distinct dark brown (7.5YR 3/2) iron-manganese oxide concretions throughout; moderately acid.

Range in Characteristics

Depth to free carbonates: More than 40 inches (102 cm)

Thickness of the solum: 36 to 70 inches (91 to 178 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 4

Chroma—1 to 3

Texture—silt loam

E horizon (where present):

Hue—10YR

Value—4 or 5

Chroma—1 to 4

Texture—silt loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam or silt loam

BC and C horizon(s):

Hue—10YR

Value—4 or 5

Chroma—4 to 6

Texture—silt loam or silty clay loam

280B—Fayette silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Fayette and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils that have stratified sandy material or clay loam till within a depth of 60 inches
- Soils that have calcareous material within a depth of 40 inches

Dissimilar soils:

- The somewhat poorly drained Atterberry and Stronghurst soils in shallow depressions and drainageways

Properties and Qualities of the Fayette Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

280C2—Fayette silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Shoulders and backslopes

Map Unit Composition

Fayette and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have calcareous material at a depth of 20 to 40 inches
- Soils that have stratified sandy material or clay loam till at a depth of 40 to 60 inches
- Soils that have bedrock at a depth of 40 to 60 inches; on the lower backslopes

Dissimilar soils:

- The somewhat poorly drained Atterberry and Stronghurst soils in shallow depressions and drainageways

Properties and Qualities of the Fayette Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

280C3—Fayette silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Fayette and similar soils: 94 percent

Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have calcareous material at a depth of 20 to 40 inches
- Soils that have stratified sandy material or clay loam till at a depth of 40 to 60 inches
- Soils that have bedrock at a depth of 40 to 60 inches; on the lower backslopes

Dissimilar soils:

- The somewhat poorly drained Atterberry and Stronghurst soils in shallow depressions and drainageways

Properties and Qualities of the Fayette Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.2 to 1.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

280D2—Fayette silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Loess hills and ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Fayette and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have calcareous material at a depth of 20 to 40 inches
- Soils that have stratified sandy material or clay loam till at a depth of 40 to 60 inches
- Soils that have bedrock at a depth of 40 to 60 inches; on the lower backslopes

Dissimilar soils:

- The somewhat poorly drained Atterberry and Stronghurst soils in shallow depressions and drainageways

Properties and Qualities of the Fayette Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Flagg Series

Drainage class: Well drained
Landform: Ground moraines
Parent material: Loess over a paleosol that formed in till
Slope range: 2 to 10 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Flagg silt loam, 5 to 10 percent slopes, eroded; 2,600 feet north and 850 feet east of the southwest corner of sec. 20, T. 27 N., R. 9 E.; Stephenson County, Illinois; USGS Ridott topographic quadrangle; lat. 42 degrees 19 minutes 25 seconds N. and long. 89 degrees 29 minutes 31 seconds W., NAD 83:

- Ap—0 to 7 inches (0 to 18 cm); brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; slightly alkaline; abrupt smooth boundary.
- BE—7 to 16 inches (18 to 40 cm); dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; neutral; gradual smooth boundary.
- Bt1—16 to 33 inches (40 to 83 cm); dark yellowish brown (10YR 4/4) silt loam; moderate medium subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear wavy boundary.
- 2Bt2—33 to 41 inches (83 to 103 cm); brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/3) clay films on faces of peds; 5 percent pebbles; moderately acid; gradual wavy boundary.
- 2Bt3—41 to 48 inches (103 to 120 cm); brown (7.5YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/3) clay films on faces of peds; 5 percent pebbles; slightly acid; clear wavy boundary.
- 2Bt4—48 to 66 inches (120 to 165 cm); yellowish red (5YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; common distinct reddish brown (5YR 4/4) clay films on faces of peds; 5 percent pebbles; neutral; gradual wavy boundary.
- 2Bt5—66 to 80 inches (165 to 203 cm); strong brown (7.5YR 4/6) silty clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/4) clay films on faces of peds; 5 percent pebbles; neutral; gradual wavy boundary.
- 2Bt6—80 to 88 inches (203 to 220 cm); strong brown (7.5YR 4/6) clay loam; moderate medium subangular blocky structure; firm; common distinct brown (7.5YR 4/4) clay films on faces of peds; 5 percent pebbles; slightly acid; clear wavy boundary.
- 2BCt—88 to 108 inches (220 to 272 cm); reddish brown (5YR 4/4) sandy clay loam; weak medium subangular blocky structure; friable; few distinct reddish brown (5YR 4/3) clay films on faces of peds; 5 percent pebbles; neutral.

Range in Characteristics

Thickness of the loess: 30 to 50 inches (76 to 127 cm)

Thickness of the solum: More than 60 inches (152 cm)

Ap horizon:

Hue—10YR

Value—2 to 5

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 5

Texture—silty clay loam

2Bt horizon:

Hue—2.5YR, 5YR, or 7.5YR

Value—4 to 6

Chroma—4 to 6

Texture—silty clay loam, clay loam, sandy clay loam, or loam

419B—Flagg silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Flagg and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have limestone bedrock at a depth of 40 to 60 inches
- Soils that have a seasonal high water table at a depth of 48 to 72 inches

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Flagg Soil

Parent material: Loess over a paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

419C2—Flagg silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Flagg and similar soils: 95 percent
 Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have limestone bedrock at a depth of 40 to 60 inches
- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have a thinner dark surface layer

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Flagg Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.8 to 2.5 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: High
Hazard of corrosion: Moderate for steel and high for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Fox Series

Drainage class: Well drained

Landform: Outwash plains, kames, and end moraines

Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits with or without an overlying thin mantle of loess or other silty material

Slope range: 4 to 20 percent

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Fox silt loam, 2 to 4 percent slopes; at an elevation of 930 feet; 1,150 feet north and 2,400 feet west of the southeast corner of sec. 1, T. 45 N., R. 5 E.; McHenry County, Illinois; USGS Harvard topographic quadrangle; lat. 42 degrees 24 minutes 12 seconds N. and long. 88 degrees 35 minutes 52 seconds W., NAD 27; UTM Zone 16, Easting 0368505, Northing 4695798, NAD 83:

Ap1—0 to 3 inches (0 to 8 cm); dark brown (10YR 3/3) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common very fine roots; slightly acid; abrupt smooth boundary.

Ap2—3 to 7 inches (8 to 18 cm); 97 percent brown (10YR 4/3) and 3 percent dark yellowish brown (10YR 4/4) silt loam, pale brown (10YR 6/3) dry; weak medium platy structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) organic coatings on faces of peds; slightly acid; abrupt smooth boundary.

Bt1—7 to 11 inches (18 to 28 cm); dark yellowish brown (10YR 4/4) silty clay loam; weak fine and medium subangular blocky structure; friable; common very fine roots; few distinct dark brown (10YR 3/3) organo-clay films and brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt2—11 to 21 inches (28 to 53 cm); dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 1 percent gravel; moderately acid; gradual smooth boundary.

2Bt3—21 to 27 inches (53 to 69 cm); dark yellowish brown (10YR 4/4) clay loam; moderate medium subangular blocky structure; friable; common very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; 1 percent gravel; moderately acid; clear smooth boundary.

2Bt4—27 to 32 inches (69 to 81 cm); brown (7.5YR 4/4) clay loam; weak medium subangular blocky structure; firm; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; 10 percent gravel; moderately acid; abrupt smooth boundary.

3C—32 to 60 inches (81 to 152 cm); yellowish brown (10YR 5/4) gravelly coarse sand and gravelly sand; single grain; loose; 25 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess or other silty material: Less than 24 inches (61 cm)

Depth to sandy and gravelly deposits: 20 to 40 inches (51 to 102 cm)

Depth to carbonates: 20 to 40 inches (51 to 102 cm)

Thickness of the solum: 20 to 40 inches (51 to 102 cm)

Ap or A horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 or 3
Texture—loam or silt loam

Bt and 2Bt horizons:

Hue—7.5YR or 10YR
Value—3 or 4
Chroma—3 or 4
Texture—silt loam, silty clay loam, clay loam, loam, sandy clay loam, or sandy loam or the gravelly analogs of these textures
Content of rock fragments—less than 35 percent

3C horizon:

Hue—7.5YR or 10YR
Value—4 to 7
Chroma—3 or 4
Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand or coarse sand
Content of rock fragments—15 to 70 percent

735C2—Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded

Setting

Landform: Stream terraces

Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent
Rodman and similar soils: 31 percent
Fox and similar soils: 29 percent
Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 3.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—3e; Rodman—4s; Fox—3e
Prime farmland category: Not prime farmland
Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

735D2—Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded

Setting

Landform: Stream terraces

Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent

Rodman and similar soils: 31 percent

Fox and similar soils: 29 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 3.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits

Drainage class: Excessively drained

Slowest permeability within a depth of 40 inches: Moderately rapid

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 2.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Low for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 7.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—4e; Rodman—4s; Fox—3e

Prime farmland category: Not prime farmland

Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

735E2—Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded

Setting

Landform: Stream terraces

Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent

Rodman and similar soils: 31 percent

Fox and similar soils: 29 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches
Available water capacity: About 3.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—6e; Rodman—6s; Fox—4e
Prime farmland category: Not prime farmland
Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

Greenbush Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess

Slope range: 0 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Greenbush silt loam, 2 to 5 percent slopes; 1,430 feet west and 1,400 feet north of the southeast corner of sec. 18, T. 8 N., R. 1 W.; Warren County, Illinois; USGS Greenbush topographic quadrangle; lat. 40 degrees 40 minutes 40 seconds N. and long. 90 degrees 32 minutes 47 seconds W., NAD 27:

- Ap—0 to 6 inches (0 to 15 cm); very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; slightly acid; abrupt smooth boundary.
- E—6 to 10 inches (15 to 25 cm); dark grayish brown (10YR 4/2) silt loam; weak thin platy structure; friable; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; moderately acid; abrupt smooth boundary.
- BE—10 to 17 inches (25 to 43 cm); brown (10YR 4/3) silt loam; moderate medium platy structure parting to weak fine subangular blocky; friable; few distinct very dark gray (10YR 3/1) organic coatings and common distinct gray (10YR 6/1) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.
- Bt1—17 to 29 inches (43 to 74 cm); yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; friable; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common distinct gray (10YR 6/1) (dry) silt coatings on faces of peds; strongly acid; gradual smooth boundary.
- Bt2—29 to 38 inches (74 to 97 cm); brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many faint light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common medium prominent gray (5Y 6/1) iron depletions within peds; common prominent black (7.5YR 2/1) manganese oxide stains within the matrix; strongly acid; gradual wavy boundary.
- Bt3—38 to 53 inches (97 to 135 cm); brown (10YR 5/3) silty clay loam; weak medium prismatic structure parting to moderate fine angular blocky; friable; common faint brown (10YR 4/3) clay films on faces of peds; many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; common medium prominent gray (5Y 6/1) iron depletions within peds; common prominent black (7.5YR 2/1) manganese oxide stains within the matrix; strongly acid; gradual wavy boundary.
- BCt—53 to 75 inches (135 to 191 cm); about 60 percent brown (10YR 5/3) and 40 percent light olive gray (5Y 6/2) silt loam; weak medium and coarse prismatic structure parting to weak fine and medium angular blocky; friable; few faint brown (10YR 4/3) clay films on faces of peds; few faint light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron within peds; common prominent black (7.5YR 2/1) manganese oxide stains within the matrix; moderately acid; gradual wavy boundary.
- C—75 to 100 inches (191 to 254 cm); about 55 percent yellowish brown (10YR 5/4) and 45 percent light olive gray (5Y 6/2) silt loam; massive; friable; many medium distinct light brownish gray (10YR 6/2) iron depletions within the matrix; many prominent black (7.5YR 2/1) manganese oxide stains within the matrix; moderately acid.

Range in Characteristics

Depth to carbonates: More than 60 inches (152 cm)

Depth to the base of the argillic horizon: 36 to 70 inches (91 to 178 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR

Value—3 to 5

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam or silt loam

C horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—2 to 6

Texture—silt loam

675A—Greenbush silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits

Map Unit Composition

Greenbush and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have outwash or a clay loam buried soil at a depth of 40 to 60 inches
- Soils that have either a thinner or thicker surface layer
- Soils that do not have a seasonal high water table at a depth of 24 to 48 inches

Dissimilar soils:

- The somewhat poorly drained Atterberry and Muscatune soils in the slightly lower positions
- Somewhat poorly drained soils on shoulders
- The poorly drained Sable soils on summits and toeslopes

Properties and Qualities of the Greenbush Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

675B—Greenbush silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Shoulders and summits

Map Unit Composition

Greenbush and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have outwash or a clay loam buried soil at a depth of 40 to 60 inches
- Soils that have either a thinner or thicker surface layer
- Soils that do not have a seasonal high water table at a depth of 24 to 48 inches

Dissimilar soils:

- The somewhat poorly drained Atterberry and Muscatune soils in the slightly lower positions
- The poorly drained Sable soils on summits and toeslopes

Properties and Qualities of the Greenbush Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

675C—Greenbush silt loam, 5 to 10 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Shoulders and backslopes

Map Unit Composition

Greenbush and similar soils: 91 percent

Dissimilar soils: 9 percent

Components of Minor Extent

Similar soils:

- Soils that have outwash or a clay loam buried soil at a depth of 40 to 60 inches
- Soils that have either a thinner or thicker surface layer
- Soils that do not have a seasonal high water table at a depth of 24 to 48 inches

Dissimilar soils:

- The somewhat poorly drained Atterberry and Muscatune soils in the slightly lower positions

Properties and Qualities of the Greenbush Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

675C2—Greenbush silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Shoulders and backslopes

Map Unit Composition

Greenbush and similar soils: 91 percent

Dissimilar soils: 9 percent

Components of Minor Extent

Similar soils:

- Soils that have outwash or a clay loam buried soil at a depth of 40 to 60 inches
- Soils that have either a thinner or thicker surface layer
- Soils that do not have a seasonal high water table at a depth of 24 to 48 inches

Dissimilar soils:

- The somewhat poorly drained Atterberry and Muscatune soils in the slightly lower positions

Properties and Qualities of the Greenbush Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet, February through April

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Griswold Series

Drainage class: Well drained

Landform: End moraines and ground moraines

Parent material: Till

Slope range: 6 to 12 percent

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Griswold soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not

significantly affect the use and management of the soils. These soils are classified as fine-loamy, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Griswold loam, 4 to 6 percent slopes, eroded; at an elevation of 830 feet (253 meters); 1,000 feet north and 1,850 feet west of the southeast corner of sec. 33, T. 46 N., R. 8 E.; McHenry County, Illinois; USGS Richmond topographic quadrangle; lat. 42 degrees 25 minutes 03 seconds N. and long. 88 degrees 18 minutes 12 seconds W., NAD 27:

- Ap—0 to 10 inches (0 to 25 cm); 95 percent very dark grayish brown (10YR 3/2) and 5 percent brown (10YR 4/3) loam, grayish brown (10YR 5/2) dry; weak medium subangular blocky structure parting to moderate fine and medium granular; friable; many very fine roots; 1 percent gravel; neutral; clear smooth boundary.
- Bt1—10 to 14 inches (25 to 36 cm); 85 percent dark yellowish brown (10YR 4/4) and 15 percent very dark grayish brown (10YR 3/2) clay loam; moderate very fine and fine subangular blocky structure; friable; many very fine roots; few distinct brown (10YR 4/3) clay films and dark brown (10YR 3/3) organo-clay films on faces of peds and in pores; 1 percent gravel; neutral; clear smooth boundary.
- Bt2—14 to 20 inches (36 to 51 cm); dark yellowish brown (10YR 4/4) clay loam; moderate fine and medium subangular blocky structure; friable; many very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds and in pores; few distinct dark brown (10YR 3/3) organo-clay films on faces of peds and in pores; 3 percent gravel; neutral; clear wavy boundary.
- Bt3—20 to 24 inches (51 to 61 cm); dark yellowish brown (10YR 4/4) loam; weak medium subangular blocky structure; friable; common very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds and in pores; very few distinct very dark grayish brown (10YR 3/2) organo-clay films in root channels and in pores; 5 percent gravel; neutral; clear smooth boundary.
- BC—24 to 27 inches (61 to 69 cm); yellowish brown (10YR 5/4) sandy loam; weak medium subangular blocky structure; friable; common very fine roots; 10 percent gravel; slightly effervescent; slightly alkaline; clear wavy boundary.
- C—27 to 60 inches (69 to 152 cm); yellowish brown (10YR 5/4) sandy loam; massive; friable; few very fine roots; 13 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 16 inches (18 to 41 cm)

Depth to carbonates: 20 to 32 inches (51 to 81 cm)

Thickness of the solum: 24 to 40 inches (61 to 102 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—loam or silt loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—clay loam, loam, or sandy loam

C horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—sandy loam or gravelly sandy loam

Content of rock fragments—10 to 35 percent

363D2—Griswold loam, 6 to 12 percent slopes, eroded

Setting

Landform: End moraines and ground moraines

Position on the landform: Backslopes

Map Unit Composition

Griswold and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have less sand and more clay in the subsoil
- Soils that have calcareous material at a depth of more than 40 inches
- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have a surface layer of clay loam

Dissimilar soils:

- Ogle soils that have calcareous material at a depth of more than 60 inches; in positions similar to those of the Griswold soil
- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Griswold Soil

Parent material: Till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 8.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Harpster Series

Drainage class: Poorly drained

Landform: Outwash plains, till plains, and stream terraces

Parent material: Calcareous loess

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Calciaquolls

Typical Pedon

Harpster silty clay loam, 0 to 2 percent slopes; at an elevation of 635 feet (194 meters); 1,452 feet south and 990 feet west of the northeast corner of sec. 8, T. 16 N., R. 6 E.; Bureau County, Illinois; USGS Mineral topographic quadrangle; lat. 41 degrees 23 minutes 23 seconds N. and long. 89 degrees 49 minutes 22 seconds W., NAD 27:

Apk—0 to 8 inches (0 to 20 cm); black (N 2.5/) silty clay loam, very dark gray (N 3/) dry; moderate medium granular structure; friable; few fine roots; violently effervescent; moderately alkaline; abrupt smooth boundary.

Ak—8 to 18 inches (20 to 46 cm); black (N 2.5/) silty clay loam, very dark gray (N 3/) dry; moderate fine subangular blocky structure; friable; few fine roots; violently effervescent; moderately alkaline; clear smooth boundary.

Bkg1—18 to 26 inches (46 to 66 cm); dark gray (10YR 4/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many prominent very dark gray (N 3/) organic stains; violently effervescent; moderately alkaline; clear smooth boundary.

Bkg2—26 to 32 inches (66 to 81 cm); dark gray (5Y 4/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine distinct strong brown (7.5YR 5/6) iron accumulations in the matrix; violently effervescent; moderately alkaline; clear smooth boundary.

Ckg—32 to 60 inches (81 to 152 cm); gray (10YR 5/1) silty clay loam; massive; friable; many fine distinct strong brown (7.5YR 5/6) iron accumulations in the matrix; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches (25 to 51 cm)

Thickness of the solum: 26 to 46 inches (66 to 117 cm)

Apk or Ak horizon:

Hue—10YR to 5Y or N

Value—2 to 3

Chroma—0 or 1

Texture—silty clay loam

Bkg horizon:

Hue—10YR to 5Y or N

Value—3 to 6

Chroma—0 to 2

Texture—silty clay loam

Ckg or Cg horizon:

Hue—7.5YR to 5Y

Value—4 to 6

Chroma—1 to 8

Texture—silt loam, silty clay loam, or loam

67A—Harpster silty clay loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains

Position on the landform: Summits

Map Unit Composition

Harpster and similar soils: 92 percent

Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:

- Soils that formed in water-deposited materials

Dissimilar soils:

- Soils that have a seasonal high water table at a depth of more than 24 inches
- The poorly drained Drummer soils on toeslopes
- The well drained Plano soils on summits
- The well drained Proctor soils on summits and shoulders

Properties and Qualities of the Harpster Soil

Parent material: Calcareous loess

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 5.5 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.2 foot, January through May

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

Harvard Series

Drainage class: Well drained

Landform: Outwash plains

Parent material: Loess or other silty material and the underlying outwash

Slope range: 0 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Harvard silt loam, 2 to 5 percent slopes; 2,300 feet east and 1,320 feet south of the northwest corner of sec. 16, T. 9 N., R. 3 E.; Knox County, Illinois; USGS Maquon topographic quadrangle; lat. 40 degrees 46 minutes 04 seconds N. and long. 90 degrees 10 minutes 05 seconds W., NAD 27:

Ap—0 to 7 inches (0 to 18 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak thick platy structure parting to weak fine subangular

- blocky; friable; few very fine roots; few dark yellowish brown (10YR 4/4) mixings of subsoil material in the lower part; neutral; clear smooth boundary.
- Bt1—7 to 14 inches (18 to 36 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; few very fine roots; few distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds and lining pores; slightly acid; clear smooth boundary.
- Bt2—14 to 22 inches (36 to 56 cm); dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; few very fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
- Bt3—22 to 32 inches (56 to 81 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.
- Bt4—32 to 37 inches (81 to 94 cm); yellowish brown (10YR 5/4) silt loam; weak coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.
- 2Bt5—37 to 45 inches (94 to 114 cm); yellowish brown (10YR 5/4) clay loam; weak coarse subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds; neutral; abrupt smooth boundary.
- 2C—45 to 60 inches (114 to 152 cm); dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6), stratified sandy loam, loam, and loamy sand; massive; very friable; slightly acid.

Range in Characteristics

Thickness of the loess or other silty material: 20 to 40 inches (51 to 102 cm)

Depth to carbonates: More than 40 inches (102 cm)

Thickness of the solum: 36 to 60 inches (91 to 152 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—loam, silt loam, sandy clay loam, sandy loam, or clay loam

Content of rock fragments—less than 10 percent

2C horizon:

Hue—10YR

Value—3 to 6

Chroma—3 to 6

Texture—loam, silt loam, clay loam, sandy loam, or loamy sand; commonly stratified

Content of rock fragments—less than 15 percent

344A—Harvard silt loam, 0 to 2 percent slopes***Setting***

Landform: Outwash plains

Position on the landform: Summits

Map Unit Composition

Harvard and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have outwash material at a depth of more than 40 inches

Dissimilar soils:

- The somewhat poorly drained Millbrook soils in depressions and drainageways

Properties and Qualities of the Harvard Soil

Parent material: Loess or other silty material and the underlying outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

344B—Harvard silt loam, 2 to 5 percent slopes***Setting***

Landform: Stream terraces and outwash plains

Position on the landform: Summits and backslopes

Map Unit Composition

Harvard and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have outwash material at a depth of more than 40 inches

Dissimilar soils:

- The somewhat poorly drained Millbrook soils in depressions and drainageways
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Harvard Soil

Parent material: Loess or other silty material and the underlying outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

344C2—Harvard silt loam, 5 to 10 percent slopes, eroded***Setting***

Landform: Stream terraces and outwash plains

Position on the landform: Backslopes and shoulders

Map Unit Composition

Harvard and similar soils: 92 percent

Dissimilar soils: 8 percent

Components of Minor Extent*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have outwash material at a depth of more than 40 inches

Dissimilar soils:

- The somewhat poorly drained Millbrook soils in depressions and drainageways
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Harvard Soil

Parent material: Loess or other silty material and the underlying outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Hitt Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess over till over residuum derived from limestone and dolomite

Slope range: 2 to 10 percent

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Hitt soil in map unit 506C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Hitt silt loam, 2 to 5 percent slopes; about 2,200 feet east and 2,200 feet south of the northwest corner of sec. 36, T. 27 N., R. 10 E.; Winnebago County, Illinois; USGS Pecatonica topographic quadrangle; lat. 42 degrees 17 minutes 53 seconds N. and long. 89 degrees 17 minutes 33 seconds W., NAD 83:

Ap—0 to 9 inches (0 to 23 cm); very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many fine roots; slightly acid (pH 6.1); clear smooth boundary.

A—9 to 14 inches (23 to 36 cm); very dark brown (10YR 2/2) silt loam, brown (10YR 4/3) dry; moderate fine subangular blocky structure; friable; many fine roots; slightly acid (pH 6.4); clear smooth boundary.

Bt1—14 to 18 inches (36 to 46 cm); dark brown (7.5YR 3/3) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; few distinct dark brown (7.5YR 3/2) clay films on faces of peds; moderately acid (pH 6.0); clear smooth boundary.

2Bt2—18 to 22 inches (46 to 56 cm); dark brown (7.5YR 3/4) clay loam; moderate medium subangular blocky structure; firm; common fine roots; few distinct dark brown (7.5YR 3/2) clay films on faces of peds; 5 percent nonflat subrounded mixed rock fragments 2 to 20 mm in size; moderately acid (pH 5.6); clear smooth boundary.

2Bt3—22 to 27 inches (56 to 69 cm); brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct dark reddish brown (5YR 3/2) clay films on faces of peds; 5 percent nonflat subrounded mixed rock fragments 2 to 20 mm in size; moderately acid (pH 5.9); gradual smooth boundary.

2Bt4—27 to 32 inches (69 to 81 cm); reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; few distinct dark reddish brown (5YR 3/2) clay films on faces of peds; 5 percent nonflat subrounded mixed rock fragments 2 to 20 mm in size; moderately acid (pH 5.9); clear smooth boundary.

2Bt5—32 to 41 inches (81 to 104 cm); reddish brown (5YR 4/4) clay loam; moderate coarse subangular blocky structure; firm; few fine roots; few distinct dark reddish brown (5YR 3/2) clay films on faces of peds; 2 percent nonflat subrounded mixed rock fragments 2 to 20 mm in size and 5 percent flat very angular limestone fragments 2 to 20 mm in size; moderately acid (pH 5.9); abrupt smooth boundary.

3Bt6—41 to 45 inches (104 to 114 cm); reddish brown (2.5YR 4/4) clay; strong medium angular blocky structure; very firm; few fine roots between peds; few distinct dark reddish brown (5YR 3/3) clay films on faces of peds; 5 percent flat very angular limestone fragments 2 to 20 mm in size; neutral (pH 6.6); abrupt smooth boundary.

3R—45 inches (114 cm); broken limestone.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 6 to 10 inches (15 to 25 cm)

Thickness of the loess: 10 to 25 inches (25 to 64 cm)

Thickness of the till: 25 to 40 inches (64 to 102 cm)

Depth to limestone bedrock: 40 to 60 inches (102 to 152 cm)

Thickness of the solum: 40 to 60 inches (102 to 152 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Textures—silt loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam

2Bt horizon:

Hue—2.5YR, 5YR, or 7.5YR

Value—3 to 5

Chroma—3 to 5

Texture—sandy clay loam or clay loam

3Bt horizon:

Hue—2.5YR, 5YR, or 7.5YR

Value—3 or 4

Chroma—3 or 4

Textures—silty clay or clay with a variable content of chert

506B—Hitt silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Hitt and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a thicker surface layer
- Soils that have a thinner surface layer
- Soils that have more sand in the surface layer and in the upper part of the subsoil
- Soils that have more silt and less sand above the bedrock
- The well drained Ogle soils in positions similar to those of the Hitt soil

Dissimilar soils:

- Soils that have fractured limestone bedrock at a depth of 10 to 20 inches; in positions similar to those of the Hitt soil

Properties and Qualities of the Hitt Soil

Parent material: Loess over till over residuum derived from limestone and dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 7.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 5.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

506C2—Hitt silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Hitt and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a thicker surface layer
- Soils that have a thinner surface layer
- Soils that have more sand in the surface layer and in the upper part of the subsoil
- Soils that have more silt and less sand above the bedrock

Dissimilar soils:

- Soils that are less than 40 inches or more than 60 inches deep over the underlying bedrock; in positions similar to those of the Hitt soil
- Soils that have fractured limestone bedrock at a depth of 10 to 20 inches; in positions similar to those of the Hitt soil
- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Hitt Soil

Parent material: Loess over till over residuum derived from limestone and dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 7.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Houghton Series

Drainage class: Very poorly drained

Landform: Flood plains, ground moraines, and outwash plains

Parent material: Herbaceous organic material

Slope range: 0 to 2 percent

Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon

Houghton muck, 0 to 2 percent slopes; at an elevation of 625 feet (191 meters); 312 feet north and 384 feet west of the southeast corner of sec. 2, T. 16 N., R. 6 E.; Bureau County, Illinois; USGS Mineral topographic quadrangle; lat. 41 degrees 23 minutes 42 seconds N. and long. 89 degrees 45 minutes 45 seconds W., NAD 27:

Oap—0 to 10 inches (0 to 25 cm); muck (sapric material), black (N 2.5/) broken face and rubbed, black (10YR 2/1) dry; about 20 percent fiber, less than 5 percent rubbed; moderate medium granular structure; very friable; many very fine to medium roots throughout; slightly acid; abrupt smooth boundary.

Oa1—10 to 21 inches (25 to 53 cm); muck (sapric material), black (N 2.5/) broken face and rubbed; about 25 percent fiber, 10 percent rubbed; moderate medium subangular blocky structure; very friable; few fine roots throughout; neutral; clear smooth boundary.

Oa2—21 to 29 inches (53 to 74 cm); muck (sapric material), black (10YR 2/1) broken face and rubbed; about 50 percent fiber, 15 percent rubbed; moderate medium

subangular blocky structure; very friable; few fine roots throughout; neutral; clear smooth boundary.

Oa3—29 to 37 inches (74 to 94 cm); muck (sapric material), black (N 2.5/) broken face and rubbed; about 50 percent fiber, 15 percent rubbed; weak medium subangular blocky structure; very friable; few fine roots throughout; neutral; clear smooth boundary.

Oa4—37 to 60 inches (94 to 152 cm); muck (sapric material), black (N 2.5/) broken face and rubbed; about 50 percent fiber, 15 percent rubbed; massive; very friable; few fine roots throughout; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the organic deposits: More than 51 inches (130 cm)

Surface tier:

Hue—10YR or N

Value—2 to 3

Chroma—0 or 1

Subsurface tier:

Hue—7.5YR, 10YR, or N

Value—2 to 3

Chroma—0 to 2

8103A—Houghton muck, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains and outwash plains

Map Unit Composition

Houghton and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have less than 60 inches of black muck

Dissimilar soils:

- The poorly drained Sawmill soils in positions similar to those of the Houghton soil

Properties and Qualities of the Houghton Soil

Parent material: Herbaceous organic material over alluvium

Drainage class: Very poorly drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow to moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 23.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 70 to 100 percent

Shrink-swell potential: Not rated

Depth and months of the highest apparent seasonal high water table: At the surface, November through June

Depth and months of deepest ponding: 0.5 foot, November through June

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 3w

Prime farmland category: Not prime farmland

Hydric soil status: Hydric

Huntsville Series

Drainage class: Well drained

Landform: Flood plains

Parent material: Alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Hapludolls

Typical Pedon

Huntsville silt loam, 0 to 2 percent slopes, frequently flooded; at an elevation of 667 feet (203 meters); 2,475 feet east and 495 feet south of the northwest corner of sec. 1, T. 12 N., R. 4 E.; Knox County, Illinois; USGS Lafayette topographic quadrangle; lat. 41 degrees 03 minutes 37 seconds N. and long. 89 degrees 59 minutes 42 seconds W., NAD 27:

Ap—0 to 10 inches (0 to 25 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; slightly acid; clear smooth boundary.

A1—10 to 16 inches (25 to 41 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

A2—16 to 27 inches (41 to 69 cm); dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine granular structure; friable; common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; neutral; clear smooth boundary.

AC—27 to 52 inches (69 to 132 cm); brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organic coatings on faces of peds; neutral; clear smooth boundary.

C—52 to 60 inches (132 to 152 cm); dark brown (10YR 3/3) silt loam; massive; friable; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 57 inches (61 to 145 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam

AC horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silt loam; loam below a depth of 40 inches in some pedons

C horizon:

Hue—10YR

Value—3 to 5

Chroma—3 or 4

Texture—silt loam or loam

**8077A—Huntsville silt loam, 0 to 2 percent slopes,
occasionally flooded**

Setting

Landform: Flood plains

Map Unit Composition

Huntsville and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils that have more sand in the profile

Dissimilar soils:

- The somewhat poorly drained Lawson and Orion soils in the slightly lower positions
- The poorly drained Sawmill and Radford soils in depressions
- The poorly drained Beaucoup soils in positions similar to those of the Huntsville soil

Properties and Qualities of the Huntsville Soil

Parent material: Alluvium

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 13.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: Low for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

Keltner Series

Drainage class: Moderately well drained

Landform: Valley sides

Parent material: Loess over residuum derived from shale

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls

Taxadjunct features: The Keltner soil in map unit 546C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Oxyaquic Hapludalf.

Typical Pedon

Keltner silt loam, 2 to 5 percent slopes; 380 feet east and 240 feet north of the center of sec. 32, T. 26 N., R. 7 E.; Stephenson County, Illinois; USGS Shannon topographic quadrangle; lat. 42 degrees 12 minutes 23 seconds N. and long. 89 degrees 42 minutes 59 seconds W., NAD 27:

- Ap—0 to 8 inches (0 to 20 cm); black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate medium granular structure; friable; common light gray (10YR 7/2) (dry) silt coatings on faces of peds; neutral; abrupt smooth boundary.
- A—8 to 13 inches (20 to 33 cm); very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak fine granular structure; friable; moderately acid; clear smooth boundary.
- Bt1—13 to 20 inches (33 to 51 cm); dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt2—20 to 27 inches (51 to 69 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common distinct brown (10YR 4/3) clay films on faces of peds; many medium distinct light olive brown (2.5Y 5/4) and few fine distinct yellowish brown (10YR 5/8) masses of iron in the matrix; moderately acid; clear smooth boundary.
- Bt3—27 to 38 inches (69 to 97 cm); dark grayish brown (10YR 4/2) silty clay loam; moderate medium subangular blocky structure; firm; many distinct grayish brown (10YR 5/2) clay films on faces of peds; many dark brown (7.5YR 3/2) iron-manganese oxide concretions throughout; many medium distinct yellowish brown (10YR 5/8) masses of iron and grayish brown (2.5Y 5/2) iron depletions in the matrix; moderately acid; abrupt smooth boundary.
- 2Bt4—38 to 41 inches (97 to 104 cm); mixed light olive brown (2.5Y 5/4), greenish gray (5G 6/1), and yellowish brown (10YR 5/8) clay; moderate medium and coarse angular blocky structure; very firm; few faint olive gray (5Y 5/2) clay films on faces of peds; neutral; gradual smooth boundary.
- 2Cr—41 to 60 inches (104 to 152 cm); mixed olive (5Y 5/3), greenish gray (5BG 6/1), and yellowish brown (10YR 5/8), thinly bedded clayey shale containing many fragments of limestone in discontinuous layers ranging from 1 to 3 inches in thickness; horizontal cleavage planes with light greenish gray (5G 7/1) fillings and coatings; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 30 to 50 inches (76 to 127 cm)

Thickness of the mollic epipedon or dark surface layer: 7 to 24 inches (18 to 61 cm)

Thickness of the solum: 40 to 50 inches (102 to 127 cm)

Depth to clayey, calcareous shale bedrock: 40 to 60 inches (102 to 152 cm)

A horizon:

Hue—10YR
 Value—2 to 3
 Chroma—1 or 2
 Texture—silt loam

Bt horizon:

Hue—7.5YR or 10YR
 Value—4 or 5
 Chroma—2 to 6
 Texture—silty clay loam

2Bt horizon:

Hue—10YR, 2.5Y, or 5Y
 Value—4 to 6
 Chroma—2 to 6
 Texture—silty clay loam, silty clay, or clay

2Cr horizon:

Hue—10YR, 2.5Y, 5Y, 5GY, 5G, 5BG, or N
 Value—4 to 6
 Chroma—0 to 4
 Texture—clay or silty clay shale

546B—Keltner silt loam, 2 to 5 percent slopes***Setting***

Landform: Valley sides

Position on the landform: Shoulders and summits

Map Unit Composition

Keltner and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have less than 30 inches of loess
- Soils that have shale bedrock at a depth of 20 to 40 inches
- Soils that have till above the bedrock

Dissimilar soils:

- Soils that have shale bedrock at a depth of 10 to 20 inches; in positions similar to those of the Keltner soil
- The somewhat poorly drained Loran soils on shoulders

Properties and Qualities of the Keltner Soil

Parent material: Loess over residuum derived from shale

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Available water capacity: About 7.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 2.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

546C2—Keltner silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Valley sides

Position on the landform: Backslopes

Map Unit Composition

Keltner and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have less than 30 inches of loess
- Soils that have shale bedrock at a depth of 20 to 40 inches
- Soils that have till above the bedrock

Dissimilar soils:

- Soils that have shale bedrock at a depth of 10 to 20 inches; in positions similar to those of the Keltner soil
- The somewhat poorly drained Loran soils on shoulders
- The poorly drained Sawmill soils on flood plains

Properties and Qualities of the Keltner Soil

Parent material: Loess over residuum derived from shale

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Available water capacity: About 7.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 2.0 feet,
February through April

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Kendall Series

Drainage class: Somewhat poorly drained
Landform: Stream terraces and outwash plains
Parent material: Loess over outwash
Slope range: 0 to 5 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Kendall silt loam, 0 to 2 percent slopes; at an elevation of 650 feet (198 meters); 400 feet west and 1,160 feet north of the center of sec. 36, T. 15 N., R. 10 E.; Douglas County, Illinois; USGS Oakland, Illinois, topographic quadrangle; lat. 39 degrees 42 minutes 24 seconds N. and long. 88 degrees 02 minutes 17 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; many very fine and fine roots; few fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; neutral; abrupt smooth boundary.
- E—7 to 11 inches (18 to 28 cm); grayish brown (10YR 5/2) silt loam; moderate fine and medium granular structure; friable; many very fine and fine roots; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; slightly acid; clear smooth boundary.
- BE—11 to 14 inches (28 to 36 cm); brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; many very fine and fine roots; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; slightly acid; clear smooth boundary.
- Btg1—14 to 25 inches (36 to 64 cm); grayish brown (10YR 5/2) silty clay loam; moderate fine and medium prismatic structure parting to moderate fine and medium subangular blocky; firm; few very fine and fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; few medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; common fine faint brown (10YR 5/3) masses of iron accumulation in the matrix; strongly acid; clear smooth boundary.
- Btg2—25 to 41 inches (64 to 104 cm); grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure parting to moderate medium and coarse subangular blocky; firm; few very fine and fine roots; common distinct dark grayish brown (10YR 4/2) clay films on faces of peds; few medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; moderately acid; clear smooth boundary.
- Btg3—41 to 51 inches (104 to 130 cm); 55 percent yellowish brown (10YR 5/6) and 45 percent gray (5Y 5/1) silty clay loam; weak medium prismatic structure parting to weak coarse subangular blocky; firm; few very fine and fine roots; common distinct gray (10YR 5/1) clay films on faces of peds; few medium rounded black (7.5YR

2.5/1) weakly cemented iron-manganese oxide nodules throughout; slightly acid; clear smooth boundary.

2Btg4—51 to 58 inches (130 to 147 cm); 40 percent strong brown (7.5YR 5/6), 30 percent yellowish brown (10YR 5/6), and 30 percent gray (5Y 5/1) loam; weak coarse subangular blocky structure; friable; few distinct dark gray (10YR 4/1) clay films on faces of peds; common fine and medium rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide nodules throughout; about 5 percent fine gravel; neutral; clear smooth boundary.

2Cg1—58 to 74 inches (147 to 188 cm); 45 percent yellowish brown (10YR 5/6), 45 percent gray (5Y 5/1), and 10 percent strong brown (7.5YR 5/6), stratified loam, sandy loam, and silt loam; massive; friable; about 5 percent fine gravel; slightly alkaline; abrupt smooth boundary.

2Cg2—74 to 80 inches (188 to 203 cm); 60 percent grayish brown (10YR 5/2), 30 percent gray (10YR 5/1), and 20 percent yellowish brown (10YR 5/6), stratified gravelly loam, gravelly sandy loam, and silt loam; massive; friable; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to more than 60 inches (102 to more than 152 cm)

Depth to carbonates: More than 40 inches (102 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 5

Chroma—1 to 3

Texture—silt loam

E horizon:

Hue—10YR or 2.5Y

Value—4 to 7

Chroma—2 or 3

Texture—silt loam

BE horizon (where present):

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—silt loam or silty clay loam

Btg or Bt horizon:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

Texture—silty clay loam

2Btg, 2Bt, 2BCg, or 2BC horizon:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

Texture—loam, clay loam, silt loam, or sandy loam

Content of rock fragments—less than 15 percent

2Cg or 2C horizon:

Hue—7.5YR, 10YR, 2.5Y, or 5Y

Value—4 to 6

Chroma—1 to 8

Texture—stratified silt loam, loam, sandy loam, clay loam, silty clay loam, or sandy clay loam; or sandy loam till
 Content of rock fragments—0 to 20 percent

242A—Kendall silt loam, 0 to 2 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on the landform: Footslopes and summits

Map Unit Composition

Kendall and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have less than 40 inches of silty material over the underlying outwash

Dissimilar soils:

- The poorly drained Drummer and Sable soils in shallow depressions and drainageways
- The well drained Camden and St. Charles soils in the slightly higher positions

Properties and Qualities of the Kendall Soil

Parent material: Loess over outwash

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Not hydric

242B—Kendall silt loam, 2 to 5 percent slopes

Setting

Landform: Outwash plains

Position on the landform: Footslopes

Map Unit Composition

Kendall and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have less than 40 inches of silty material over the underlying outwash

Dissimilar soils:

- The poorly drained Drummer and Sable soils in shallow depressions and drainageways
- The well drained Camden and St. Charles soils in the slightly higher positions

Properties and Qualities of the Kendall Soil

Parent material: Loess over outwash

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

Kidder Series

Drainage class: Well drained

Landform: Ground moraines and end moraines

Parent material: Till

Slope range: 6 to 18 percent

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Kidder loam, 10 to 15 percent slopes, eroded; at an elevation of 758 feet (231 meters); 580 feet west and 2,440 feet south of the northeast corner of sec. 18, T. 22 N., R. 9 E.; Lee County, Illinois; USGS Grand Detour topographic quadrangle; lat. 41 degrees 53 minutes 45 seconds N. and long. 89 degrees 29 minutes 51 seconds W., NAD 27:

Ap—0 to 7 inches (0 to 18 cm); mixed dark brown (10YR 4/3) and yellowish brown (10YR 5/6) loam, pale brown (10YR 6/3) dry; moderate very fine subangular blocky structure; friable; few fine roots; neutral; abrupt smooth boundary.

- Bt1—7 to 15 inches (18 to 38 cm); brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; few fine roots; many faint brown (7.5YR 4/4) clay films on faces of peds; slightly acid; clear smooth boundary.
- Bt2—15 to 21 inches (38 to 53 cm); brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; few fine roots; many faint brown (7.5YR 4/4) clay films on faces of peds; few pebbles; neutral; clear smooth boundary.
- Bt3—21 to 28 inches (53 to 71 cm); brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; few pebbles; slightly acid; clear smooth boundary.
- Bt4—28 to 37 inches (71 to 94 cm); brown (7.5YR 5/4) sandy loam; moderate medium subangular blocky structure; friable; few fine roots; few faint brown (7.5YR 4/4) clay films on faces of peds; few fine dark accumulations of iron-manganese oxide; few pebbles; moderately acid; clear smooth boundary.
- C—37 to 60 inches (94 to 152 cm); brownish yellow (10YR 6/6) sandy loam; massive; friable; common pebbles; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: Less than 15 inches (38 cm)

Depth to the base of the argillic horizon: 20 to 40 inches (51 to 102 cm)

Ap or A horizon:

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—loam or clay loam

Bt or 2Bt horizon:

Hue—10YR or 7.5YR

Value—3 to 5

Chroma—3 to 6

Texture—loam, sandy clay loam, clay loam, or sandy loam

C or 2C horizon:

Hue—10YR

Value—5 or 6

Chroma—3 to 6

Texture—sandy loam, fine sandy loam, gravelly sandy loam, or gravelly fine sandy loam

361D3—Kidder clay loam, 6 to 12 percent slopes, severely eroded

Setting

Landform: End moraines and ground moraines

Position on the landform: Backslopes

Map Unit Composition

Kidder and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a redder subsoil

Dissimilar soils:

- Soils in which the solum is more than 60 inches thick; on till plains or moraines

Properties and Qualities of the Kidder Soil*Parent material:* Till*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderately rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 7.8 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 0.5 to 1.0 percent*Shrink-swell potential:* Moderate*Ponding:* None*Flooding:* None*Accelerated erosion:* The surface layer is mostly subsoil material.*Potential for frost action:* Moderate*Hazard of corrosion:* Moderate for steel and low for concrete*Surface runoff class:* Medium*Susceptibility to water erosion:* Moderate*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 4e*Prime farmland category:* Not prime farmland*Hydric soil status:* Not hydric**361E2—Kidder loam, 12 to 18 percent slopes, eroded*****Setting****Landform:* Ground moraines and end moraines*Position on the landform:* Backslopes***Map Unit Composition***

Kidder and similar soils: 92 percent

Dissimilar soils: 8 percent

Components of Minor Extent*Similar soils:*

- Soils that have a redder subsoil

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Kidder Soil*Parent material:* Till*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderately rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 8.3 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 1.0 to 2.0 percent*Shrink-swell potential:* Moderate*Ponding:* None*Flooding:* None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Lamoille Series

Drainage class: Well drained

Landform: Hillslopes

Parent material: Thin mantle of loess over clayey residuum over loamy-skeletal colluvium

Slope range: 18 to 35 percent

Taxonomic classification: Fine, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Lamoille silt loam, in an area of NewGlarus-Lamoille silt loams, 15 to 35 percent slopes; 900 feet west and 50 feet south of the northeast corner of sec. 31, T. 28 N., R. 2 E.; Jo Daviess County, Illinois; USGS Scales Mound West topographic quadrangle; lat. 42 degrees 23 minutes 11 seconds N. and long. 90 degrees 19 minutes 31 seconds W., NAD 83:

A—0 to 6 inches (0 to 15 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium and fine granular structure; friable; common fine and very fine roots; fragments of brown (10YR 5/3) subsurface material in the lower part; neutral; clear smooth boundary.

E—6 to 10 inches (15 to 25 cm); brown (10YR 5/3) silt loam, very pale brown (10YR 7/3) dry; weak medium platy structure; friable; few fine and very fine roots; about 2 percent cobble-sized dolomite fragments; slightly acid; clear smooth boundary.

Bt1—10 to 16 inches (25 to 41 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium and fine subangular blocky structure; friable; few fine and very fine roots; common distinct brown (10YR 4/3) clay films on faces of peds; about 2 percent gravel-sized chert fragments in the lower part; slightly acid; gradual smooth boundary.

2Bt2—16 to 24 inches (41 to 61 cm); strong brown (7.5YR 5/6) gravelly silty clay; strong medium and fine angular blocky structure; firm; few fine and very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; about 20 percent gravel-sized angular chert and dolomite fragments; neutral; clear wavy boundary.

2Bt3—24 to 38 inches (61 to 97 cm); strong brown (7.5YR 5/6) cobbly silty clay; moderate medium subangular blocky structure; firm; few fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; about 35 percent cobble- and gravel-sized dolomite fragments; neutral; gradual wavy boundary.

3Bt4—38 to 60 inches (97 to 152 cm); light yellowish brown (10YR 6/4) very cobbly loam; moderate medium and fine subangular blocky structure; friable; few fine roots; few distinct brown (10YR 4/3) clay films on faces of peds; about 50 percent cobble- and gravel-sized dolomite fragments; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: 5 to 15 inches (13 to 38 cm)

Thickness of the residuum: 10 to 30 inches (25 to 76 cm)

Thickness of the solum: 35 to more than 60 inches (89 to more than 152 cm)

A or Ap horizon:

Hue—10YR

Value—3 or 4

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—5YR or 7.5YR

Value—4 to 6

Chroma—4 to 6

Texture—silty clay loam, clay, or clay loam with 35 to 75 percent clay in the fine-earth fraction

3Bt horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—4 to 6

Texture—loam or sandy loam in the fine-earth fraction

905F—NewGlarus-Lamoille silt loams, 18 to 35 percent slopes***Setting***

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

NewGlarus and similar soils: 50 percent

Lamoille and similar soils: 45 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have less clay in the subsoil
- Soils that have limestone bedrock at a depth of less than 20 inches or more than 40 inches
- Soils that have more than 35 inches of loess over residuum or bedrock

Dissimilar soils:

- The somewhat excessively drained Elizabeth soils in positions similar to those of the NewGlarus and Lamoille soils

Properties and Qualities of the NewGlarus Soil

Parent material: Loess over clayey pedis sediment over loamy residuum derived from dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow to moderate

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Available water capacity: About 5.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Lamoille Soil

Parent material: Thin mantle of loess over clayey residuum over loamy-skeletal colluvium

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 8.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: NewGlarus—6e; Lamoille—6e

Prime farmland category: Not prime farmland

Hydric soil status: NewGlarus—not hydric; Lamoille—not hydric

Lawson Series

Drainage class: Somewhat poorly drained

Landform: Flood plains

Parent material: Silty alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls

Typical Pedon

Lawson silt loam, 0 to 2 percent slopes, occasionally flooded; 318 feet south and 1,040 feet east of the northwest corner of sec. 17, T. 17 N., R. 9 E.; Bureau County, Illinois; USGS Princeton North topographic quadrangle; lat. 41 degrees 27 minutes 54 seconds N. and long. 89 degrees 29 minutes 14 seconds W., NAD 27:

- Ap—0 to 11 inches (0 to 28 cm); very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; weak medium granular structure; friable; few fine roots throughout; neutral; clear smooth boundary.
- A1—11 to 19 inches (28 to 48 cm); black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate fine granular structure; friable; few fine roots throughout; neutral; gradual smooth boundary.
- A2—19 to 28 inches (48 to 71 cm); very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium granular structure; friable; few fine roots throughout; neutral; gradual smooth boundary.
- C1—28 to 50 inches (71 to 127 cm); dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky structure; friable; few fine roots throughout; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; very dark grayish brown (10YR 3/2) krotovina; few fine faint brown (10YR 4/3) and common fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; neutral; gradual smooth boundary.
- C2—50 to 60 inches (127 to 152 cm); grayish brown (2.5Y 5/2) silt loam; weak medium subangular blocky structure; friable; few fine roots; very dark grayish brown (10YR 3/2) krotovina; common fine faint dark grayish brown (10YR 4/2) iron depletions and common fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches (61 to 91 cm)

Ap or A horizon:

Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

C horizon:

Hue—10YR or 2.5Y
Value—3 to 6
Chroma—1 to 3
Texture—silt loam

3451A—Lawson silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 92 percent
Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:

- Soils that have a light-colored deposit of silt loam overwash
- Soils that are subject to occasional flooding

Dissimilar soils:

- The poorly drained Otter and Sawmill soils in low areas

Properties and Qualities of the Lawson Soil

Parent material: Alluvium

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 1.0 foot, January through May

Ponding: None

Frequency and most likely period of flooding: Frequent, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w

Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season

Hydric soil status: Not hydric

8451A—Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Lawson and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils in which the dark surface layer is 10 to 24 inches thick
- Soils that have a light-colored deposit of silt loam overwash
- Soils that have a buried surface horizon within a depth of 60 inches
- Soils that have more sand in the surface layer

Dissimilar soils:

- The well drained Huntsville soils in the slightly higher positions
- The poorly drained Beaucoup and Otter soils in low areas

Properties and Qualities of the Lawson Soil

Parent material: Silty alluvium

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 7.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 1.0 foot, January through May

Ponding: None

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

Lena Series

Drainage class: Very poorly drained

Landform: Flood plains

Parent material: Highly decomposed organic material

Slope range: 0 to 2 percent

Taxonomic classification: Euic, mesic Typic Haplosaprists

Typical Pedon

Lena muck, on a south-facing slope of less than 1 percent, in an area of grassland in a drained bog at an elevation of about 568 feet (173 meters); Kendall County, Illinois; about 3 miles southwest of Plano; 210 feet south and 27 feet east of the center of sec. 4, T. 36 N., R. 6 E.; USGS Newark topographic quadrangle; lat. 41 degrees 37 minutes 25 seconds N. and long. 88 degrees 33 minutes 17 seconds W., NAD 27:

- Oa1—0 to 10 inches (0 to 25 cm); muck (sapric material), black (N 2.5/) broken face and rubbed; about 5 percent fiber, a trace rubbed; weak medium subangular blocky structure; friable; 2 to 3 percent mineral material; common snail shells and shell fragments; violently effervescent; moderately alkaline; clear smooth boundary.
- Oa2—10 to 24 inches (25 to 61 cm); muck (sapric material), black (N 2.5/) broken face and rubbed; about 15 percent fiber, less than 5 percent rubbed; weak coarse subangular blocky structure; friable; about 3 percent mineral material; common snail shells and shale fragments; violently effervescent; moderately alkaline; diffuse smooth boundary.
- Oa3—24 to 68 inches (61 to 173 cm); muck (sapric material), black (N 2.5/) broken face and rubbed; about 15 percent fiber in the upper part and 20 percent in the lower part; weak coarse subangular blocky structure in the upper part, massive in the lower part; friable; about 2 percent mineral material; a few woody fragments in

the lower part; common snail shells and shell fragments; violently effervescent; moderately alkaline; gradual smooth boundary.

O_e—68 to 82 inches (173 to 208 cm); mucky peat (hemic material), black (N 2.5/) and dark brown (7.5YR 3/2) broken face and black (N 2.5/) rubbed; between 30 and 65 percent fibers; massive; less than 1 percent mineral material; few snail shells; slightly alkaline; gradual smooth boundary.

O_a—82 to 104 inches (208 to 264 cm); muck (sapric material), black (N 2.5/) broken face and very dark gray (5Y 3/1) rubbed; about 5 to 10 percent fibers; massive; 8 to 10 percent mineral material; common snail shells and shell fragments; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the organic deposits: More than 51 inches (130 cm)

Surface tier:

Hue—10YR, 7.5YR, 5YR, or N

Value—2 to 3

Chroma—0 to 2

Reaction—slightly alkaline or moderately alkaline

Subsurface tier:

Hue—7.5YR, 10YR, or N

Value—2 to 3

Chroma—0 to 2

Reaction—slightly alkaline or moderately alkaline

8210A—Lena muck, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Lena and similar soils: 85 percent

Dissimilar soils: 15 percent

Components of Minor Extent

Similar soils:

- Soils that have less than 60 inches of black muck

Dissimilar soils:

- The poorly drained Sawmill soils in positions similar to those of the Lena soil

Properties and Qualities of the Lena Soil

Parent material: Highly decomposed organic material

Drainage class: Very poorly drained

Slowest permeability within a depth of 40 inches: Moderately rapid

Permeability below a depth of 60 inches: Moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 23.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 60 to 99 percent

Shrink-swell potential: Not rated

Depth and months of the highest apparent seasonal high water table: At the surface, November through June

Depth and months of deepest ponding: 0.5 foot, November through June

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: High

Interpretive Groups

Land capability classification: 3w

Prime farmland category: Not prime farmland

Hydric soil status: Hydric

Loran Series

Drainage class: Somewhat poorly drained

Landform: Ground moraines

Parent material: Loess over till over residuum derived from clayey shale

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Loran silt loam, 2 to 5 percent slopes; 1,290 feet west and 620 feet south of the center of sec. 34, T. 26 N., R. 8 E.; Stephenson County, Illinois; USGS Forreston North topographic quadrangle; lat. 42 degrees 12 minutes 23 seconds N. and long. 89 degrees 33 minutes 58 seconds W., NAD 27:

Ap—0 to 6 inches (0 to 15 cm); black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate medium granular structure; friable; neutral; abrupt smooth boundary.

A—6 to 13 inches (15 to 33 cm); black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate medium granular structure; friable; neutral; clear smooth boundary.

Bt1—13 to 17 inches (33 to 43 cm); very dark grayish brown (10YR 3/2) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine and medium subangular blocky structure; firm; few distinct very dark gray (10YR 3/1) organo-clay films on faces of peds; neutral; clear smooth boundary.

Bt2—17 to 21 inches (43 to 53 cm); dark grayish brown (10YR 4/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few fine faint dark yellowish brown (10YR 4/4) masses of iron in the matrix; many prominent black (10YR 2/1) iron-manganese oxide concretions throughout; neutral; clear smooth boundary.

Btg1—21 to 29 inches (53 to 74 cm); dark grayish brown (2.5Y 4/2) and grayish brown (2.5Y 5/2) silty clay loam; weak medium prismatic structure parting to moderate fine and medium subangular blocky; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; many prominent black (10YR 2/1) iron-manganese oxide concretions throughout; neutral; clear smooth boundary.

Btg2—29 to 38 inches (74 to 97 cm); grayish brown (2.5Y 5/2) silt loam; weak medium and coarse prismatic structure parting to moderate medium subangular blocky; firm; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/8) and brownish yellow (10YR 6/8) masses of iron in the matrix; many prominent black (10YR 2/1) iron-manganese oxide concretions throughout; neutral; abrupt smooth boundary.

2Bt—38 to 40 inches (97 to 102 cm); yellowish brown (10YR 5/6), brown (7.5YR 5/4), and strong brown (7.5YR 5/6) clay loam; weak coarse angular blocky structure;

firm; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few prominent black (10YR 2/1) iron-manganese oxide stains and concretions throughout; neutral; abrupt smooth boundary.

3BCg—40 to 45 inches (102 to 114 cm); greenish gray (5GY 6/1) clay; weak medium prismatic structure; extremely firm; strongly effervescent; slightly alkaline; gradual smooth boundary.

3Cr—45 to 60 inches (114 to 152 cm); greenish gray (5GY 6/1) clayey shale; spots and streaks of yellow (10YR 8/6 and 7/8) iron masses throughout; massive; extremely firm; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the loess: 30 to 50 inches (76 to 127 cm)

Thickness of the mollic epipedon: 10 to 17 inches (25 to 43 cm)

Depth to paralithic contact: 40 to 60 inches (102 to 152 cm)

Thickness of the solum: 40 to 55 inches (102 to 140 cm)

Ap horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

Reaction—slightly acid or neutral

Bt horizon:

Hue—10YR or 2.5Y

Value—3 to 5

Chroma—2 or 3

Texture—silty clay loam or silt loam

Reaction—slightly acid or neutral

2Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture—clay loam or silt loam

3BCg or 3Bg horizon:

Hue—2.5Y, 5Y, 5GY, or 5G

Value—5 or 6

Chroma—1 to 4

Texture—silty clay or clay

Reaction—neutral or slightly alkaline

3Cr horizon:

Hue—2.5Y, 5Y, 5GY, or 5G

Value—5 or 6

Chroma—1 to 4

Reaction—slightly alkaline or moderately alkaline

572B—Loran silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Shoulders

Map Unit Composition

Loran and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have more clay in the surface layer
- Soils that have less clay in the subsoil
- Soils that have less than 30 inches of loess

Dissimilar soils:

- The well drained Schapville soils in the higher positions and along shale ridges
- The poorly drained Drummer soils on toeslopes
- Moderately well drained soils on shoulders
- The well drained Proctor soils on summits and shoulders

Properties and Qualities of the Loran Soil

Parent material: Loess over till over residuum derived from clayey shale

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Available water capacity: About 9.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 5.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 1.0 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

572C—Loran silt loam, 5 to 10 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Shoulders

Map Unit Composition

Loran and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have more clay in the surface layer
- Soils that have less clay in the subsoil
- Soils that have less than 30 inches of loess

Dissimilar soils:

- The well drained Schapville soils in the higher positions and along shale ridges
- The well drained Plano and Proctor soils on shoulders and backslopes

Properties and Qualities of the Loran Soil

Parent material: Loess over till over residuum derived from clayey shale

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Available water capacity: About 7.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 5.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 1.0 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Massbach Series

Drainage class: Moderately well drained

Landform: Hillslopes

Parent material: Loess over residuum derived from calcareous shale

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Massbach silt loam, 2 to 5 percent slopes; about 530 feet south and 760 feet west of the northeast corner of sec. 35, T. 27 N., R. 5 E.; Stephenson County, Illinois; USGS Kent topographic quadrangle; lat. 42 degrees 17 minutes 55 seconds N. and long. 89 degrees 53 minutes 18 seconds W., NAD 83:

A—0 to 7 inches (0 to 18 cm); very dark gray (10YR 3/1) silt loam; very dark grayish brown (10YR 3/2) crushed, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; friable; many roots; neutral; clear smooth boundary.

E—7 to 11 inches (18 to 28 cm); dark grayish brown (10YR 4/2) and brown (10YR 4/3) silt loam; moderate fine and medium granular structure; friable; many roots; few

distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.

BE—11 to 14 inches (28 to 36 cm); brown (10YR 4/3) and dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; many roots; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.

Bt1—14 to 24 inches (36 to 61 cm); brown (10YR 4/3) silty clay loam; moderate fine and medium subangular blocky structure; firm; common roots; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; many distinct dark brown (10YR 3/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt2—24 to 33 inches (61 to 84 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; common roots; common very dark gray (10YR 3/1) wormcasts; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.

Bt3—33 to 39 inches (84 to 99 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; common distinct brown (10YR 4/3) clay films on faces of peds; few distinct black (10YR 2/1) iron-manganese oxide concretions throughout; moderately acid; abrupt smooth boundary.

2Bt4—39 to 46 inches (99 to 117 cm); pale olive (5Y 6/4) silty clay; moderate medium subangular blocky structure; very firm; few fine roots; common distinct dark brown (10YR 3/3) and brown (10YR 4/3) clay films on faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron-manganese oxide in the matrix; slightly acid; abrupt smooth boundary.

2Cr—46 to 60 inches (117 to 152 cm); pale olive (5Y 6/4), yellowish brown (10YR 5/8), and brownish yellow (10YR 6/8) silty clay shale; massive; very firm; calcareous.

Range in Characteristics

Thickness of the loess: 30 to 50 inches (76 to 127 cm)

Depth to paralithic contact: 40 to 60 inches (102 to 152 cm)

Ap or A horizon:

Hue—10YR

Value—2 or 3 moist; 4 or 5 dry

Chroma—1 or 2

Texture—silt loam

Reaction—moderately acid to neutral

E horizon (where present):

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

Reaction—moderately acid to neutral

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silt loam

Reaction—moderately acid to slightly alkaline

2Bt horizon:

Hue—10YR, 2.5Y, 5Y, 5G, 5GY, or 5BG

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam, silty clay, or clay

Reaction—slightly acid to slightly alkaline

2Cr horizon:

Texture—calcareous silty clay or clay shale

753B—Massbach silt loam, 2 to 5 percent slopes***Setting****Landform:* Hills*Position on the landform:* Shoulders***Map Unit Composition***

Massbach and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils that have a lighter colored surface layer
- Soils that have shale within a depth of 40 inches

Dissimilar soils:

- The somewhat poorly drained Lawson soils

Properties and Qualities of the Massbach Soil*Parent material:* Loess over residuum derived from calcareous shale*Drainage class:* Moderately well drained*Slowest permeability within a depth of 40 inches:* Slow*Permeability below a depth of 60 inches:* Very slow or slow*Depth to restrictive feature:* 40 to 60 inches to paralithic bedrock*Available water capacity:* About 8.9 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 4.0 percent*Shrink-swell potential:* Moderate*Depth and months of the highest perched seasonal high water table:* 3.5 feet
(transitory), February through June*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Medium*Susceptibility to water erosion:* Moderate*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 2e*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric

753C2—Massbach silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hills

Position on the landform: Shoulders and backslopes

Map Unit Composition

Massbach and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have shale within a depth of 40 inches

Dissimilar soils:

- The somewhat poorly drained Lawson soils

Properties and Qualities of the Massbach Soil

Parent material: Loess over residuum derived from calcareous shale

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to paralithic bedrock

Available water capacity: About 8.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 3.5 feet (transitory), February through June

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Millbrook Series

Drainage class: Somewhat poorly drained

Landform: Outwash plains

Parent material: Eolian deposits over outwash

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs

Typical Pedon

Millbrook silt loam, 0 to 2 percent slopes; at an elevation of 660 feet (201 meters); 55 feet north and 2,240 feet west of the southeast corner of sec. 36, T. 17 N., R. 9 E.;

Champaign County, Illinois; USGS Villa Grove NW topographic quadrangle; lat. 39 degrees 52 minutes 49 seconds N. and long. 88 degrees 07 minutes 51 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine and medium granular structure; friable; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron-manganese oxide nodules throughout; neutral; abrupt smooth boundary.
- E—7 to 14 inches (18 to 36 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium platy structure parting to moderate medium granular; friable; many distinct very dark gray (10YR 3/1) organic coatings on faces of peds; few fine rounded black (7.5YR 2.5/1) very weakly cemented iron-manganese oxide nodules throughout; many fine faint brown (10YR 4/3) and few fine prominent yellowish brown (10YR 5/6) masses of iron in the matrix; neutral; clear smooth boundary.
- Bt—14 to 21 inches (36 to 53 cm); yellowish brown (10YR 5/6) silty clay loam; moderate fine subangular blocky structure; friable; few distinct dark gray (10YR 4/1) clay films on faces of peds and in pores; few medium irregular black (7.5YR 2.5/1) very weakly cemented iron-manganese oxide nodules throughout; few fine distinct yellowish brown (10YR 5/8) masses of iron in the matrix; common medium prominent grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.
- Btg1—21 to 35 inches (53 to 89 cm); 70 percent gray (10YR 5/1) and 30 percent yellowish brown (10YR 5/6) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few distinct dark gray (10YR 4/1) clay films on faces of peds and in pores; common medium irregular black (7.5YR 2.5/1) very weakly cemented iron-manganese oxide nodules throughout; moderately acid; clear smooth boundary.
- 2Btg2—35 to 44 inches (89 to 112 cm); gray (10YR 5/1) clay loam; moderate medium prismatic structure; friable; few distinct dark gray (10YR 4/1) clay films on faces of peds; few distinct very dark gray (10YR 3/1) organo-clay films in pores; few medium irregular black (7.5YR 2.5/1) very weakly cemented iron-manganese oxide nodules throughout; many coarse prominent yellowish brown (10YR 5/6) masses of iron in the matrix; slightly acid; clear smooth boundary.
- 2BCg—44 to 55 inches (112 to 140 cm); 60 percent gray (10YR 5/1) and 40 percent yellowish brown (10YR 5/4), stratified clay loam and sandy loam; weak medium prismatic structure; friable; few medium irregular black (7.5YR 2.5/1) iron-manganese oxide stains on faces of peds; common medium prominent yellowish brown (10YR 5/8) masses of iron in the matrix; 10 percent fine gravel in clay loam strata; neutral; clear smooth boundary.
- 2Cg1—55 to 73 inches (140 to 185 cm); 60 percent gray (10YR 5/1) and 40 percent yellowish brown (10YR 5/4) sandy loam stratified with thin lenses of coarse sand; massive; very friable; 5 percent fine gravel; neutral; abrupt smooth boundary.
- 2Cg2—73 to 80 inches (185 to 203 cm); 60 percent pale brown (10YR 6/3) and 40 percent light brownish gray (10YR 6/2) sandy loam; massive; very friable; 5 percent fine gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Depth to the base of the argillic horizon: 40 to 60 inches (102 to 152 cm)

Depth to carbonates: More than 40 inches (102 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3
Texture—silt loam

E horizon:

Hue—10YR
Value—4 to 6
Chroma—2 or 3
Texture—silt loam

Bt and/or Btg horizon(s):

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—silty clay loam or silt loam

2Bt, 2Btg, 2BC, and/or 2BCg horizon(s):

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 to 6
Texture—sandy loam, sandy clay loam, loam, or clay loam; thin strata of sand or silt loam in some pedons

2C and/or 2Cg horizon(s):

Hue—7.5YR, 10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 to 8
Textures—stratified sandy loam, loam, clay loam, sandy clay loam, or silt loam; thin strata of loamy sand, sand, or coarse sand in some pedons

219A—Millbrook silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains

Position on the landform: Shoulders and footslopes

Map Unit Composition

Millbrook and similar soils: 85 percent

Dissimilar soils: 15 percent

Components of Minor Extent

Similar soils:

- Soils that have either more sand or more clay in the subsoil
- Soils that have a thinner surface layer

Dissimilar soils:

- The poorly drained Drummer soils in the slightly lower positions
- The well drained Plano soils on summits
- The well drained Proctor soils on summits and shoulders

Properties and Qualities of the Millbrook Soil

Parent material: Loess or silty deposits over outwash

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland where drained

Hydric soil status: Not hydric

Millington Series

Drainage class: Poorly drained

Landform: Flood plains

Parent material: Calcareous alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-loamy, mixed, superactive, calcareous, mesic Cumulic Endoaquolls

Typical Pedon

Millington silt loam, undrained, 0 to 2 percent slopes, frequently flooded; 700 feet south and 940 feet west of the northeast corner of sec. 25, T. 20 N., R. 4 E.; Whiteside County, Illinois; USGS Prophetstown topographic quadrangle; lat. 41 degrees 41 minutes 50 seconds N. and long. 89 degrees 58 minutes 54 seconds W., NAD 27:

A—0 to 19 inches (0 to 48 cm); black (10YR 2/1) silt loam, very dark gray (10YR 3/1) dry; moderate fine subangular blocky structure; friable; few snail-shell fragments; slightly effervescent; slightly alkaline; clear smooth boundary.

Bg—19 to 35 inches (48 to 89 cm); black (10YR 2/1) loam, very dark gray (10YR 3/1) dry; weak medium subangular blocky structure; friable; few snail-shell fragments; strongly effervescent; slightly alkaline; clear smooth boundary.

Cg—35 to 60 inches (89 to 152 cm); olive gray (5Y 5/2) loam that has few thin strata of sandy loam; massive; friable; common medium prominent strong brown (7.5YR 5/8) iron masses and common medium faint dark gray (5Y 4/1) iron depletions in the matrix; few snail-shell fragments; strongly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches (61 to 91 cm)

Thickness of the solum: 24 to 48 inches (61 to 122 cm)

Ap or A horizon:

Hue—10YR, 2.5Y, or N

Value—2 to 3

Chroma—0 to 2

Texture—silt loam

Bg horizon:

Hue—10YR, 2.5Y, 5Y, or N

Value—2 to 5

Chroma—0 to 2

Texture—loam, silt loam, silty clay loam, or clay loam; strata of sandy loam and/or gravel in some pedons

Cg horizon:

Hue—10YR, 2.5Y, 5Y, or N

Value—2 to 6

Chroma—0 to 2

Texture—stratified, calcareous sandy loam to silty clay loam

8082A—Millington silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Millington and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of more than 1 to 2 feet

Dissimilar soils:

- Soils that are not calcareous
- The poorly drained Sawmill soils in low areas

Properties and Qualities of the Millington Soil

Parent material: Calcareous alluvium

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 6.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.3 foot, January through May

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

M-W—Miscellaneous water

- This map unit consists of manmade bodies of water that are used for industrial, sanitary, or mining applications and that contain water most of the year.

Muscature Series

Drainage class: Somewhat poorly drained

Landform: Ground moraines

Parent material: Loess

Slope range: 0 to 5 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aquic Argiudolls

Typical Pedon

Muscature silt loam, 0 to 2 percent slopes (fig. 5); 2,500 feet west and 2,240 feet north of the southeast corner of sec. 29, T. 9 N., R. 1 W.; Warren County, Illinois; USGS Greenbush topographic quadrangle; lat. 40 degrees 44 minutes 11 seconds N. and long. 90 degrees 31 minutes 46 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); black (10YR 2/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; very friable; common very fine and fine roots throughout; neutral; abrupt smooth boundary.
- A—7 to 13 inches (18 to 33 cm); very dark gray (10YR 3/1) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; very friable; common very fine and fine roots throughout; neutral; clear smooth boundary.
- AB—13 to 20 inches (33 to 51 cm); mixed very dark grayish brown (10YR 3/2) and brown (10YR 4/3) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine subangular blocky structure parting to weak fine granular; friable; common very fine roots throughout; few faint very dark gray (10YR 3/1) organic coatings on faces of peds; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; neutral; clear smooth boundary.
- Bt1—20 to 28 inches (51 to 71 cm); brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots between peds; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; common dark iron-manganese oxide stains throughout; neutral; clear smooth boundary.
- Bt2—28 to 38 inches (71 to 97 cm); brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots between peds; common distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; few fine distinct yellowish brown (10YR 5/6) and faint pale brown (10YR 6/3) iron masses in the matrix; common dark iron-manganese oxide stains throughout; neutral; clear smooth boundary.
- Btg—38 to 50 inches (97 to 127 cm); light brownish gray (2.5Y 6/2) silty clay loam; moderate medium subangular blocky structure; friable; few very fine roots between peds; common prominent grayish brown (10YR 5/2) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) iron masses in the matrix; common dark iron-manganese oxide stains throughout; slightly acid; clear smooth boundary.
- BCg—50 to 60 inches (127 to 152 cm); light brownish gray (2.5Y 6/2) silt loam; weak medium subangular blocky structure; friable; common medium prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) iron masses in the matrix; common dark iron-manganese oxide stains throughout; slightly acid; clear smooth boundary.



Figure 5.—A profile of a Muscatune soil.

Cg—60 to 80 inches (152 to 203 cm); light brownish gray (2.5Y 6/2) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) and dark yellowish brown (10YR 4/6) iron masses in the matrix; few fine round very dark brown (10YR 2/2) soft masses of iron-manganese oxide throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 20 inches (25 to 51 cm)

Thickness of the loess: More than 60 inches (152 cm)

Depth to free carbonates: More than 40 inches (102 cm)

Thickness of the solum: 40 to 64 inches (102 to 163 cm)

Ap or A horizon:

Hue—10YR
 Value—2 to 3
 Chroma—1 or 2
 Texture—silt loam

Bt horizon:

Hue—10YR or 2.5Y
 Value—4 to 6
 Chroma—2 to 4
 Texture—silty clay loam

C horizon:

Hue—10YR or 2.5Y
 Value—5 or 6
 Chroma—2 to 4
 Texture—silt loam or silty clay loam

51A—Muscatune silt loam, 0 to 2 percent slopes***Setting****Landform:* Ground moraines*Position on the landform:* Summits***Map Unit Composition***

Muscatune and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent*Similar soils:*

- Soils that have more sand in the profile

Dissimilar soils:

- The poorly drained Drummer and Sable soils in shallow depressions and drainageways
- The poorly drained Edgington soils on toeslopes
- The well drained Osco soils on summits and shoulders

Properties and Qualities of the Muscatune Soil*Parent material:* Loess*Drainage class:* Somewhat poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 12.4 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 3.5 to 5.0 percent*Shrink-swell potential:* Moderate*Depth and months of the highest apparent seasonal high water table:* 1.0 foot, January through May*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete

Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

51B—Muscatune silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines
Position on the landform: Shoulders and summits

Map Unit Composition

Muscatune and similar soils: 95 percent
 Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have more sand in the profile

Dissimilar soils:

- The poorly drained Drummer and Sable soils in shallow depressions and drainageways

Properties and Qualities of the Muscatune Soil

Parent material: Loess
Drainage class: Somewhat poorly drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 12.5 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Depth and months of the highest apparent seasonal high water table: 1.0 foot, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: High for steel and low for concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Myrtle Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess over a paleosol that formed in till

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Myrtle silt loam, 2 to 5 percent slopes; 490 feet west and 165 feet north of the southeast corner of sec. 19, T. 29 N., R. 9 E.; Stephenson County, Illinois; USGS Davis topographic quadrangle; lat. 42 degrees 29 minutes 27 seconds N. and long. 89 degrees 29 minutes 58 seconds W., NAD 83:

- Ap—0 to 8 inches (0 to 20 cm); very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; neutral (pH 6.9); abrupt smooth boundary.
- E—8 to 14 inches (20 to 36 cm); dark grayish brown (10YR 4/2) silt loam; weak medium platy structure parting to weak fine and medium granular; friable; slightly acid (pH 6.3); clear smooth boundary.
- Bt1—14 to 19 inches (36 to 48 cm); brown (10YR 4/3) silty clay loam; moderate very fine subangular blocky structure; friable; few faint very dark grayish brown (10YR 3/2) organo-clay films on horizontal faces of peds; common distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; moderately acid (pH 5.8); clear smooth boundary.
- Bt2—19 to 27 inches (48 to 69 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; firm; common distinct dark brown (10YR 3/3) clay films on faces of peds; common distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; moderately acid (pH 5.8); clear smooth boundary.
- Bt3—27 to 37 inches (69 to 94 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct dark brown (10YR 3/3) and very dark grayish brown (10YR 3/2) clay films on faces of peds; common distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; moderately acid (pH 5.8); gradual smooth boundary.
- Bt4—37 to 42 inches (94 to 107 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; common distinct dark brown (7.5YR 3/3) clay films on faces of peds; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of a few peds; about 12 percent (by volume) sand; moderately acid (pH 5.8); clear smooth boundary.
- 2Bt5—42 to 80 inches (107 to 203 cm); brown (7.5YR 4/4) clay loam; moderate medium and coarse subangular blocky structure; firm; common distinct reddish brown (5YR 4/4) and dark reddish brown (5YR 3/3) clay films on faces of peds; few fine prominent black (N 2.5/) iron-manganese oxide stains in the matrix; moderately acid (pH 5.8).

Range in Characteristics

Thickness of the dark surface layer: 6 to 9 inches (15 to 23 cm)

Thickness of the loess: 30 to 50 inches (76 to 127 cm)

Thickness of the solum: More than 60 inches (152 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR
 Value—4 or 5
 Chroma—2 or 3
 Texture—silt loam

Bt horizon:

Hue—10YR or 7.5YR
 Value—4 or 5
 Chroma—3 to 6
 Texture—silty clay loam or silt loam

2Bt horizon:

Hue—7.5YR, 5YR, or 2.5YR
 Value—4 to 6
 Chroma—4 to 6
 Texture—clay loam, silty clay loam, or sandy clay loam

414B—Myrtle silt loam, 2 to 5 percent slopes***Setting***

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Myrtle and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have a thinner surface layer
- Soils that have more sand and less clay in the lower part of the subsoil

Dissimilar soils:

- Soils that have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Myrtle Soil

Parent material: Loess over a paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

414C—Myrtle silt loam, 5 to 10 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Myrtle and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have a thinner surface layer
- Soils that have more sand and less clay in the lower part of the subsoil

Dissimilar soils:

- Soils that have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Myrtle Soil

Parent material: Loess over a paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

414C2—Myrtle silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Myrtle and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have a thinner surface layer
- Soils that have more sand and less clay in the lower part of the subsoil

Dissimilar soils:

- Soils that have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Myrtle Soil

Parent material: Loess over a paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Nasset Series

Drainage class: Well drained

Landform: Hillslopes

Parent material: Loess over residuum derived from limestone

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Mollic Hapludalfs

Typical Pedon

Nasset silt loam, 2 to 5 percent slopes; 956 feet north and 1,339 feet east of the southwest corner of sec. 34, T. 29 N., R. 7 E.; Stephenson County, Illinois; USGS Orangeville topographic quadrangle; lat. 42 degrees 27 minutes 45 seconds N. and long. 89 degrees 41 minutes 15 seconds W., NAD 27:

Ap—0 to 7 inches (0 to 18 cm); very dark brown (10YR 2/2) and very dark grayish brown (10YR 3/2) silt loam; weak thin and very thin platy structure parting to moderate medium granular; friable; common roots; moderately acid; abrupt smooth boundary.

- BE—7 to 11 inches (18 to 28 cm); dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; weak thin platy structure parting to moderate medium and coarse granular; friable; common roots; moderately acid; clear smooth boundary.
- Bt1—11 to 24 inches (28 to 61 cm); brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; firm; common roots; strongly acid; clear smooth boundary.
- Bt2—24 to 33 inches (61 to 84 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few roots; common distinct dark brown (7.5YR 3/2 and 3/3) clay films and common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- Bt3—33 to 41 inches (84 to 104 cm); dark yellowish brown (10YR 4/4) silty clay loam; weak and moderate medium and coarse angular blocky structure parting to subangular blocky; firm; few roots; common distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; few distinct dark brown (10YR 3/3) clay films on faces of peds; moderately acid; abrupt smooth boundary.
- 2Bt4—41 to 53 inches (104 to 135 cm); dark reddish brown and reddish brown (5YR 3/4 to 5/4) clay; weak and moderate medium angular blocky structure parting to subangular blocky; firm; few prominent black (5YR 2.5/1) clay films on faces of peds; slightly acid; abrupt smooth boundary.
- 3R—53 inches (135 cm); very pale brown (10YR 7/4) and yellow (10YR 7/6 and 7/8) dolomitic limestone with some chert; hard but shattered; calcareous.

Range in Characteristics

Depth to lithic contact (limestone): 40 to 60 inches (102 to 152 cm)

A or Ap horizon:

Hue—10YR
Value—2 to 3
Chroma—1 to 3
Texture—silt loam
Reaction—strongly acid to neutral

E or EB horizon (where present):

Hue—10YR
Value—4 or 5
Chroma—2 or 3
Texture—silt loam
Reaction—strongly acid to neutral

BE horizon (where present):

Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silt loam
Reaction—strongly acid to slightly acid

Bt horizon:

Hue—10YR
Value—4 or 5
Chroma—3 to 6
Texture—silt loam or silty clay loam
Reaction—strongly acid to slightly acid

2Bt horizon (where present):

Hue—5YR to 10YR
Value—3 to 6
Chroma—4 to 8

Texture—clay, clay loam, silty clay, or silty clay loam or the channery or flaggy analogs of these textures; very flaggy or extremely flaggy clay, clay loam, silty clay, or silty clay loam in some pedons where the 2Bt horizon is 10 to 20 inches (25 to 50 cm) thick

Content of rock fragments—0 to 20 percent limestone channers and chert fragments and 0 to 15 percent limestone flagstones

731B—Nasset silt loam, 2 to 5 percent slopes

Setting

Landform: Hills

Position on the landform: Summits and shoulders

Map Unit Composition

Nasset and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils in which the surface layer has lighter or darker colors
- Soils that have limestone bedrock at a depth of 20 to 40 inches or at a depth of more than 60 inches

Dissimilar soils:

- Soils that have limestone bedrock within a depth of 20 inches

Properties and Qualities of the Nasset Soil

Parent material: Loess over residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Impermeable or very slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 9.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

731C2—Nasset silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hills

Position on the landform: Backslopes and shoulders

Map Unit Composition

Nasset and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils in which the surface layer has lighter or darker colors
- Soils that have limestone bedrock at a depth of 20 to 40 inches or at a depth of more than 60 inches

Dissimilar soils:

- Soils that have limestone bedrock within a depth of 20 inches

Properties and Qualities of the Nasset Soil

Parent material: Loess over residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Impermeable or very slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 9.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

NewGlarus Series

Drainage class: Well drained

Landform: Hillslopes

Parent material: Loess over clayey pedisidiment over loamy residuum derived from dolomite

Slope range: 10 to 35 percent

Taxonomic classification: Fine-silty over clayey, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

NewGlarus silt loam, in an area of NewGlarus-Lamoille silt loams, 18 to 35 percent slopes; 980 feet south and 2,490 feet west of the northeast corner of sec. 17, T. 26 N., R. 5 E.; Jo Daviess County, Illinois; USGS Kent topographic quadrangle; lat. 42 degrees 15 minutes 07 seconds N. and long. 89 degrees 56 minutes 57 seconds W., NAD 83:

A—0 to 5 inches (0 to 13 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common fine roots;

- common distinct very dark gray (10YR 3/1) organic coatings on faces of peds; about 2 percent gravel-sized chert fragments; neutral; abrupt smooth boundary.
- BE—5 to 14 inches (13 to 36 cm); dark yellowish brown (10YR 4/4) silt loam; moderate medium platy structure parting to moderate medium and fine subangular blocky; friable; few fine roots; many distinct dark brown (10YR 3/3) organic coatings on faces of peds; few distinct very dark grayish brown (10YR 3/2) organic coatings lining root channels and pores; about 10 percent gravel-sized chert fragments; neutral; clear smooth boundary.
- Bt1—14 to 22 inches (36 to 56 cm); yellowish brown (10YR 5/4) silty clay loam; strong medium and fine angular blocky structure; firm; few fine and medium roots; many distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; about 10 percent gravel-sized chert fragments; moderately acid; abrupt smooth boundary.
- 2Bt2—22 to 34 inches (56 to 86 cm); strong brown (7.5YR 5/6) gravelly silty clay; strong medium and fine angular blocky structure; firm; few medium roots; many prominent dark reddish brown (5YR 3/2) clay films on faces of peds; about 20 percent gravel-sized chert fragments with cobble- and stone-sized dolomite fragments in the lower part; neutral; clear wavy boundary.
- 2R—34 inches (86 cm); level-bedded dolomite with 6 inches of yellow (10YR 7/6) fragmented dolomite in the upper part; strong brown (7.5YR 5/6) silty clay residuum in fissures.

Range in Characteristics

Thickness of the loess: 12 to 35 inches (30 to 89 cm)

Thickness of the residuum: 6 to 20 inches (15 to 51 cm)

Thickness of the solum: 20 to 40 inches (51 to 102 cm)

Ap or A horizon:

Hue—10YR

Value—3 or 4

Chroma—2 or 3

Texture—silt loam or silty clay loam

BE horizon:

Hue—10YR

Value—3 to 5

Chroma—3 or 4

Texture—silt loam or silty clay loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—silt loam or silty clay loam

2Bt horizon:

Hue—2.5YR, 5YR, or 7.5YR

Value—3 to 5

Chroma—3 to 6

Texture—silty clay, clay, clay loam, or silty clay loam or the channery, gravelly, or flaggy analogs of these textures

3Bt horizon (where present):

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 to 4

Texture—loam or sandy loam or the very channery, very flaggy, extremely channery, or extremely flaggy analogs of these textures

905F—NewGlarus-Lamoille silt loams, 18 to 35 percent slopes

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

NewGlarus and similar soils: 50 percent

Lamoille and similar soils: 45 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have less clay in the subsoil
- Soils that have limestone bedrock at a depth of less than 20 inches or more than 40 inches
- Soils that have more than 35 inches of loess over residuum or bedrock

Dissimilar soils:

- The somewhat excessively drained Elizabeth soils in positions similar to those of the NewGlarus and Lamoille soils

Properties and Qualities of the NewGlarus Soil

Parent material: Loess over clayey pedisediment over loamy residuum derived from dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow to moderate

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Available water capacity: About 5.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Lamoille Soil

Parent material: Thin mantle of loess over clayey residuum over loamy-skeletal colluvium

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 8.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: NewGlarus—6e; Lamoille—6e

Prime farmland category: Not prime farmland

Hydric soil status: NewGlarus—not hydric; Lamoille—not hydric

928D2—NewGlarus-Palsgrove silt loams, 10 to 18 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

NewGlarus and similar soils: 50 percent

Palsgrove and similar soils: 40 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have limestone bedrock at a depth of less than 20 inches or more than 40 inches
- Severely eroded soils that have a surface layer of silty clay loam
- Soils that are underlain by loamy or clayey till above the underlying bedrock
- Soils that have no residuum in the profile

Dissimilar soils:

- The somewhat excessively drained Elizabeth soils in positions similar to those of the NewGlarus and Palsgrove soils
- Soils that do not have bedrock within a depth of 60 inches

Properties and Qualities of the NewGlarus Soil

Parent material: Loess over clayey pedisidiment over loamy residuum derived from dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow to moderate

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Available water capacity: About 6.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Palsgrove Soil

Parent material: Loess over residuum derived from limestone and dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Slow or moderately slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 9.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: NewGlarus—3e; Palsgrove—3e

Prime farmland category: Not prime farmland

Hydric soil status: NewGlarus—not hydric; Palsgrove—not hydric

Octagon Series

Drainage class: Moderately well drained

Landform: Ground moraines and end moraines

Parent material: Thin mantle of loess or other silty material and the underlying till

Slope range: 4 to 12 percent

Taxonomic classification: Fine-loamy, mixed, active, mesic Mollic Oxyaquic Hapludalfs

Typical Pedon

Octagon silt loam, 2 to 4 percent slopes; at an elevation of 1,052 feet; 70 feet north and 1,900 feet east of the southwest corner of sec. 18, T. 41 N., R. 7 E.; Kane County, Illinois; USGS Pingree Grove topographic quadrangle; lat. 42 degrees 01 minute 35 seconds N. and long. 88 degrees 28 minutes 56 seconds W., NAD 27:

Ap—0 to 7 inches (0 to 18 cm); very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; weak very fine granular structure; friable; common very fine roots; neutral; abrupt smooth boundary.

Bt1—7 to 13 inches (18 to 33 cm); brown (10YR 4/3) silty clay loam; weak very fine subangular blocky structure; friable; common very fine roots; common distinct dark brown (10YR 3/3) clay films on faces of peds; slightly acid; clear smooth boundary.

2Bt2—13 to 25 inches (33 to 64 cm); brown (7.5YR 4/4) clay loam; moderate fine subangular blocky structure; friable; common very fine roots; common distinct brown (7.5YR 4/3) clay films on faces of peds; 2 percent gravel; neutral; clear smooth boundary.

2Bt3—25 to 30 inches (64 to 76 cm); brown (7.5YR 5/4) clay loam; weak fine subangular blocky structure; friable; few very fine roots; few distinct brown (7.5YR 4/3) and dark brown (7.5YR 3/3) clay films on faces of peds; 3 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2Cd—30 to 60 inches (76 to 152 cm); brown (7.5YR 5/4) loam; massive; firm; few very fine roots; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Depth to carbonates: 24 to 40 inches (61 to 102 cm)

Thickness of the silty material: 0 to 18 inches (0 to 46 cm)

A or Ap horizon:

Hue—10YR

Value—2 or 3 (4 or 5 dry)

Chroma—1 to 3

Texture—silt loam

Reaction—moderately acid to neutral

Content of rock fragments—0 to 4 percent

Bt or 2Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—3 to 6

Texture—dominantly clay loam or loam; ranges to silty clay loam where the silt cap is near the maximum thickness

Clay content—18 to 34 percent

Reaction—moderately acid or slightly acid in the upper part and moderately acid to neutral in the lower part

Content of rock fragments—0 to 10 percent

Cd or 2Cd horizon:

Hue—7.5YR to 2.5Y

Value—5 or 6

Chroma—3 or 4

Texture—loam or fine sandy loam with less than 60 percent sand

Reaction—slightly alkaline or moderately alkaline; carbonates are present

Content of rock fragments—2 to 10 percent

656C2—Octagon silt loam, 4 to 6 percent slopes, eroded

Setting

Landform: Ground moraines and end moraines

Position on the landform: Shoulders and backslopes

Map Unit Composition

Octagon and similar soils: 92 percent

Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table at a depth of 40 to 60 inches
- Soils that have sandy loam till in the subsoil

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches

- Poorly drained soils on toeslopes
- Somewhat poorly drained soils on footslopes and summits

Properties and Qualities of the Octagon Soil

Parent material: Thin mantle of loess or other silty material and the underlying till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: 24 to 60 inches to dense material

Available water capacity: About 8.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 2.0 feet,
February through April

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

656D2—Octagon silt loam, 6 to 12 percent slopes, eroded

Setting

Landform: End moraines and ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Octagon and similar soils: 92 percent

Dissimilar soils: 8 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table at a depth of 40 to 60 inches
- Soils that have sandy loam till in the subsoil

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches
- Poorly drained soils on toeslopes
- Somewhat poorly drained soils on summits and footslopes

Properties and Qualities of the Octagon Soil

Parent material: Thin mantle of loess or other silty material and the underlying till

Drainage class: Moderately well drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: 24 to 60 inches to dense material

Available water capacity: About 7.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest perched seasonal high water table: 2.0 feet,
February through April

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Ogle Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess over a paleosol that formed in till

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Ogle soil in map unit 412C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Ogle silt loam, 2 to 5 percent slopes; 2,110 feet south and 175 feet east of the northwest corner of sec. 22, T. 28 N., R. 8 E.; Stephenson County, Illinois; USGS Dakota topographic quadrangle; lat. 42 degrees 24 minutes 41 seconds N. and long. 89 degrees 34 minutes 26 seconds W., NAD 83:

Ap—0 to 11 inches (0 to 28 cm); very dark brown (10YR 2/2) silt loam; moderate medium granular structure; friable; slightly acid; gradual smooth boundary.

Bt1—11 to 17 inches (28 to 43 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium and coarse subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; few very dark grayish brown (10YR 3/2) wormcasts and organic coatings on faces of peds; slightly acid; gradual smooth boundary.

Bt2—17 to 33 inches (43 to 84 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt3—33 to 52 inches (84 to 130 cm); yellowish red (5YR 5/6) silty clay loam; moderate medium prismatic structure parting to moderate medium angular blocky; firm; common distinct yellowish red (5YR 4/6) clay films on faces of peds; moderately acid; clear wavy boundary.

2Bt4—52 to 72 inches (130 to 180 cm); reddish brown 5YR 4/4) silty clay loam; strong medium and coarse blocky structure; firm; common distinct dark reddish brown (5YR 3/4) clay films on faces of peds; moderately acid; clear wavy boundary.

2BC—72 to 80 inches (180 to 203 cm); yellowish red (5YR 4/6) silty clay loam; weak coarse prismatic structure; firm; few distinct reddish brown (5YR 4/4) clay films on faces of peds; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 18 inches (18 to 46 cm)

Thickness of the loess: 30 to 50 inches (76 to 127 cm)

Thickness of the solum: More than 60 inches (152 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam or silt loam

2Bt and 2BC horizons:

Hue—2.5YR, 5YR, or 7.5YR

Value—4 to 6

Chroma—4 to 6

Texture—clay loam, sandy clay loam, or silty clay loam

2C horizon:

Texture—loam, clay loam, or sandy loam

412B—Ogle silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Ogle and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have a thinner surface layer
- Soils that have less than 30 inches of silty material over the loamy till
- Soils that have limestone bedrock at a depth of more than 60 inches

Dissimilar soils:

- Soils that have limestone bedrock at a depth of 20 to 40 inches
- The well drained Ashdale soils on summits and shoulders

Properties and Qualities of the Ogle Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.1 inches to a depth of 60 inches
Content of organic matter in the surface layer: 3.0 to 5.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

412C2—Ogle silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes

Map Unit Composition

Ogle and similar soils: 90 percent
 Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table within a depth of 6 feet
- Soils that have a thinner surface layer
- Soils that have less than 30 inches of silty material over the loamy till
- Soils that have limestone bedrock at a depth of more than 60 inches

Dissimilar soils:

- Soils that have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Ogle Soil

Parent material: Loess over a paleosol that formed in till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 9.8 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Moderate
Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Oneco Series

Drainage class: Well drained

Landform: Hillslopes

Parent material: Loess over till over residuum derived from limestone

Slope range: 5 to 10 percent

Taxonomic classification: Fine-loamy, mixed, active, mesic Mollic Hapludalfs

Typical Pedon

Oneco silt loam, 5 to 10 percent slopes, eroded; about 4 miles north of Davis; 430 feet west and 85 feet north of the center of sec. 35, T. 29 N., R. 9 E.; Stephenson County, Illinois; USGS Orangeville topographic quadrangle; lat. 42 degrees 29 minutes 11 seconds N. and long. 89 degrees 43 minutes 00 seconds W., NAD 83:

A—0 to 9 inches (0 to 23 cm); very dark brown (10YR 2/2) silt loam; moderate medium and fine granular structure; friable; neutral (pH 7.0); clear smooth boundary.

E—9 to 13 inches (23 to 33 cm); 50 percent dark grayish brown (10YR 4/2) and 50 percent very dark grayish brown (10YR 3/2) silt loam; moderate medium and fine granular structure; friable; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; neutral (pH 7.0); clear smooth boundary.

BE—13 to 17 inches (33 to 43 cm); 60 percent brown (10YR 4/3) and 40 percent dark brown (10YR 3/3) silty clay loam; moderate fine and very fine subangular blocky structure; firm; few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds; few very dark grayish brown (10YR 3/2) wormcasts; neutral (pH 7.0); clear smooth boundary.

Bt1—17 to 23 inches (43 to 58 cm); brown (10YR 4/3) (crushed) silty clay loam; moderate fine and very fine subangular blocky structure; firm; very few distinct light gray (10YR 7/1) (dry) silt coatings on faces of peds and common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few very dark grayish brown (10YR 3/2) wormcasts; strongly acid (pH 5.5); clear smooth boundary.

2Bt2—23 to 35 inches (58 to 89 cm); brown (7.5YR 4/4) clay loam; moderate medium and fine subangular blocky structure; firm; common distinct dark brown (7.5YR 3/2) clay films on faces of peds; many fine distinct black (7.5YR 2.5/1) accumulations of iron-manganese oxide in the matrix; 5 percent rounded igneous rock fragments 2 to 75 mm in size; very strongly acid (pH 5.0); gradual smooth boundary.

2Bt3—35 to 45 inches (89 to 114 cm); reddish brown (5YR 4/4) silty clay loam; moderate medium angular and subangular blocky structure; very firm; common distinct dark brown (7.5YR 3/2) clay films on faces of peds; many fine distinct black (7.5YR 2.5/1) accumulations of iron-manganese oxide in the matrix; 8

percent rounded igneous rock fragments 2 to 75 mm in size; strongly acid (pH 5.5); clear smooth boundary.

3Bt4—45 to 52 inches (114 to 132 cm); reddish brown (5YR 4/4) silty clay; moderate medium angular blocky structure; very firm; many distinct dark brown (7.5YR 3/2) clay films on faces of peds; moderately acid (pH 6.0); abrupt smooth boundary.

3R—52 inches (132 cm); very pale brown (10YR 7/3) and brownish yellow (10YR 6/8) limestone bedrock; slightly effervescent; partially disintegrated rock in the upper 2 to 3 inches (5 to 8 cm) and slight tonguing of residuum into this horizon.

Range in Characteristics

Thickness of the solum: 40 to 60 inches (102 to 152 cm)

A or Ap horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam

E horizon (where present):

Hue—10YR

Value—4 or 5

Chroma—2 or 3

Texture—silt loam

BE horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silt loam

2Bt horizon:

Hue—2.5YR, 5YR, or 7.5YR

Value—3 to 5

Chroma—3 or 4

Texture—clay loam, sandy clay loam, or silty clay loam

3Bt horizon:

Hue—5YR

Value—3 or 4

Chroma—3 or 4

Texture—silty clay or clay

752C2—Oneco silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Shoulders and backslopes (fig. 6)

Map Unit Composition

Oneco and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils in which the surface layer has lighter or darker colors



Figure 6.—A typical landscape in an area of Oneco soils. The elevation differences are controlled predominantly by the underlying bedrock at a depth of 40 to 60 inches.

- Soils that have bedrock at a depth of more than 60 inches
- Soils that have no limestone residuum

Dissimilar soils:

- Soils that have fractured limestone bedrock at a depth of 10 to 20 inches; in positions similar to those of the Oneco soil

Properties and Qualities of the Oneco Soil

Parent material: Loess over till over residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 7.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Orion Series

Drainage class: Somewhat poorly drained

Landform: Flood plains

Parent material: Alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Coarse-silty, mixed, superactive, nonacid, mesic Aquic Udifluvents

Typical Pedon

Orion silt loam, 0 to 2 percent slopes, frequently flooded; 270 feet south and 1,000 feet east of the northwest corner of sec. 17, T. 22 N., R. 6 E.; Whiteside County, Illinois; USGS Milledgeville topographic quadrangle; lat. 41 degrees 54 minutes 06 seconds N. and long. 89 degrees 50 minutes 13 seconds W., NAD 27:

- A—0 to 5 inches (0 to 13 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; massive; friable; many thin strata of brown (10YR 4/3) and very dark gray (10YR 3/1) silt loam; neutral; abrupt smooth boundary.
- C1—5 to 15 inches (13 to 38 cm); dark grayish brown (10YR 4/2) silt loam; massive; friable; many thin strata of pale brown (10YR 6/3) and yellowish brown (10YR 5/4) silt loam; few fine prominent brown (7.5YR 4/4) masses of iron in the matrix; neutral; clear wavy boundary.
- C2—15 to 29 inches (38 to 74 cm); dark grayish brown (10YR 4/2) silt loam; massive; friable; many thin strata of dark yellowish brown (10YR 4/4), yellowish brown (10YR 5/6), and pale brown (10YR 6/3) silt loam; few very dark gray (10YR 3/1) wormcasts; few fine distinct brown (7.5YR 4/4) masses of iron in the matrix; neutral; abrupt wavy boundary.
- Ab1—29 to 39 inches (74 to 99 cm); black (10YR 2/1) silt loam; weak thick platy structure parting to weak medium and fine subangular blocky; friable; neutral; clear smooth boundary.
- Ab2—39 to 51 inches (99 to 130 cm); black (10YR 2/1) silty clay loam; strong medium and fine angular blocky structure; friable; neutral; clear smooth boundary.
- Ab3—51 to 60 inches (130 to 152 cm); very dark gray (10YR 3/1) silty clay loam; moderate medium and fine subangular blocky structure; friable; neutral.

Range in Characteristics

Thickness of the surface layer: 5 to 10 inches (13 to 25 cm)

Depth to the buried soil: 20 to 40 inches (51 to 102 cm)

Ap or A horizon:

Hue—10YR

Value—3 to 6

Chroma—2 or 3

Texture—silt loam; stratified in some pedons

C horizon:

Hue—10YR

Value—3 to 5

Chroma—2 or 3

Texture—silt loam; stratified in some pedons

Ab horizon:

Hue—10YR or 2.5Y

Value—2 to 3

Chroma—1 or 2

Texture—silty clay loam or silt loam; stratified in some pedons

8415A—Orion silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Orion and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have more sand in the upper part of the profile
- Soils in which the buried soil is at a depth of more than 40 inches
- Soils that have a seasonal high water table within a depth of 1 foot
- Soils that have a seasonal high water table at a depth of more than 3 feet

Dissimilar soils:

- The well drained Huntsville soils in the slightly higher positions
- The poorly drained Beaucoup and Sawmill soils in low areas

Properties and Qualities of the Orion Soil

Parent material: Alluvium

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Low

Depth and months of the highest apparent seasonal high water table: 1.0 foot, January through May

Ponding: None

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

802B—Orthents, loamy, undulating

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Orthents and similar soils: 85 percent

Dissimilar components: 15 percent

Components of Minor Extent

Similar soils:

- Soils that have slopes of more than 5 percent
- Soils that have more sand and less clay
- Soils used as borrow areas, highway interchanges, rest areas, or large rights-of-way

Dissimilar components:

- Soils in areas used as sanitary landfills
- Nonsoil areas covered by buildings, streets, or parking lots

Properties and Qualities of the Orthents

Parent material: Mine spoil or earthy fill

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: Moderate

Hazard of corrosion: Low for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Oscos Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess

Slope range: 0 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Oscos soil in map unit 86C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Osco silt loam, 2 to 5 percent slopes (fig. 7); at an elevation of 858 feet (262 meters); 316 feet north and 88 feet west of the southeast corner of sec. 23, T. 24 N., R. 6 E.; Carroll County, Illinois; USGS Lanark topographic quadrangle; lat. 42 degrees 03 minutes 15 seconds N. and long. 89 degrees 45 minutes 52 seconds W., NAD 27:

- Ap—0 to 10 inches (0 to 25 cm); very dark brown (10YR 2/2) silt loam, very dark grayish brown (10YR 3/2) dry; moderate fine granular structure; friable; common fine roots; slightly acid; abrupt smooth boundary.
- A—10 to 14 inches (25 to 36 cm); very dark grayish brown (10YR 3/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate medium and coarse granular structure; friable; common fine roots; strongly acid; clear smooth boundary.
- BA—14 to 20 inches (36 to 51 cm); dark yellowish brown (10YR 3/4) and dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine subangular blocky structure; friable; common fine roots; few distinct light brownish gray (10YR 6/2) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- Bt1—20 to 26 inches (51 to 66 cm); brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; few distinct gray (10YR 6/1) (dry) silt coatings and common distinct dark brown (10YR 3/3) clay films on faces of peds; strongly acid; clear smooth boundary.
- Bt2—26 to 37 inches (66 to 94 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct light brownish gray (10YR 6/2) (dry) silt coatings and many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine faint brown (10YR 5/3) and common medium prominent strong brown (7.5YR 5/8) iron masses in the matrix; many prominent very dark gray (N 3/) and dark brown (7.5YR 3/2) iron-manganese oxide concretions throughout; strongly acid; clear smooth boundary.
- Bt3—37 to 45 inches (94 to 114 cm); light yellowish brown (10YR 6/4) silty clay loam; moderate coarse subangular blocky structure; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common fine distinct light brownish gray (10YR 6/2) iron depletions and few medium prominent strong brown (7.5YR 5/8) iron masses in the matrix; strongly acid; gradual smooth boundary.
- BC—45 to 55 inches (114 to 140 cm); yellowish brown (10YR 5/4) and brown (10YR 4/3) silty clay loam; weak coarse angular blocky structure; friable; few fine distinct light brownish gray (10YR 6/2) iron depletions in the matrix; strongly acid; gradual smooth boundary.
- C—55 to 60 inches (140 to 152 cm); yellowish brown (10YR 5/4) and brown (10YR 4/3) silt loam; massive; friable; many fine distinct yellowish brown (10YR 5/6) iron masses and common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 18 inches (18 to 46 cm)

Depth to free carbonates: More than 48 inches (122 cm)

Thickness of the solum: 40 to more than 60 inches (102 to more than 152 cm)

Ap, A, or BA horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam



Figure 7.—A profile of an Osco soil.

Bt horizon:

Hue—10YR

Value—4 to 6

Chroma—3 or 4

Texture—silty clay loam or silt loam

BC, C, or Cg horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—3 to 6

Texture—silt loam or silty clay loam

86A—Osco silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits

Map Unit Composition

Osco and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have a seasonal high water table at a depth of more than 6 feet
- Soils that have a thinner, darker surface layer
- Soils that have stratified loamy outwash or loamy till in the substratum

Dissimilar soils:

- The somewhat poorly drained Elburn and Muscatune soils in shallow depressions and drainageways
- The poorly drained Sable soils in shallow depressions and drainageways

Properties and Qualities of the Osco Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet, February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

86B—Osco silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Osco and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have a seasonal high water table at a depth of more than 6 feet
- Soils that have a thinner, darker surface layer
- Soils that have stratified loamy outwash or loamy till in the substratum

Dissimilar soils:

- The somewhat poorly drained Elburn and Muscatune soils in shallow depressions and drainageways
- The poorly drained Sable soils in shallow depressions and drainageways

Properties and Qualities of the Osco Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

86C—Osco silt loam, 5 to 10 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Osco and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have a seasonal high water table at a depth of more than 6 feet
- Soils that have a thinner, darker surface layer
- Soils that have stratified loamy outwash or loamy till in the substratum

Dissimilar soils:

- The somewhat poorly drained Elburn and Muscatune soils in shallow depressions and drainageways
- The poorly drained Sable soils in shallow depressions and drainageways

Properties and Qualities of the Osco Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet, February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

86C2—Osco silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Shoulders and backslopes

Map Unit Composition

Osco and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 2 to 4 feet
- Soils that have a seasonal high water table at a depth of more than 6 feet
- Soils that have a thinner, darker surface layer
- Soils that have stratified loamy outwash or loamy till in the substratum

Dissimilar soils:

- The somewhat poorly drained Elburn and Muscatune soils in shallow depressions and drainageways
- The poorly drained Sable soils in shallow depressions and drainageways

Properties and Qualities of the Osco Soil*Parent material:* Loess*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 11.7 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 3.0 percent*Shrink-swell potential:* Moderate*Depth and months of the highest apparent seasonal high water table:* 4.0 feet, February through April*Ponding:* None*Flooding:* None*Accelerated erosion:* The surface layer has been thinned by erosion.*Potential for frost action:* High*Hazard of corrosion:* Moderate for steel and concrete*Surface runoff class:* Medium*Susceptibility to water erosion:* Moderate*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 3e*Prime farmland category:* Not prime farmland*Hydric soil status:* Not hydric***Otter Series****Drainage class:* Poorly drained*Landform:* Flood plains*Parent material:* Alluvium*Slope range:* 0 to 2 percent*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls***Typical Pedon***

Otter silt loam, 0 to 2 percent slopes; 1,960 feet west and 2,540 feet south of the northeast corner of sec. 35, T. 22 N., R. 5 E.; Whiteside County, Illinois; USGS Morrison topographic quadrangle; lat. 41 degrees 51 minutes 06 seconds N. and long. 89 degrees 53 minutes 18 seconds W., NAD 27:

Ap—0 to 10 inches (0 to 25 cm); black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate medium granular structure; friable; slightly acid; abrupt smooth boundary.

A1—10 to 16 inches (25 to 41 cm); black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; slightly acid; clear smooth boundary.

A2—16 to 21 inches (41 to 53 cm); black (2.5Y 2.5/1) silt loam, very dark gray (10YR 3/1) dry; weak fine subangular blocky structure parting to moderate medium granular; friable; few fine distinct grayish brown (2.5Y 5/2) iron depletions and few fine prominent yellowish brown (10YR 5/8) iron masses in the matrix; few fine

prominent dark reddish brown (5YR 2.5/2) coatings of iron on faces of peds; slightly acid; clear smooth boundary.

A3—21 to 35 inches (53 to 89 cm); black (2.5Y 2.5/1) mucky silt loam, black (2.5Y 2.5/1) dry; weak medium subangular blocky structure; friable; few fine prominent strong brown (7.5YR 4/6) iron masses in the matrix; few fine prominent dark reddish brown (5YR 2.5/2) coatings of iron on faces of peds; slightly acid; clear smooth boundary.

AB—35 to 43 inches (89 to 109 cm); very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak coarse subangular blocky structure; friable; few fine prominent dark reddish brown (5YR 2.5/2) coatings of iron on faces of peds; common medium faint dark gray (10YR 4/1) iron depletions and few fine prominent brown (7.5YR 4/4) iron masses in the matrix; neutral; clear smooth boundary.

Bg—43 to 50 inches (109 to 127 cm); grayish brown (2.5Y 5/2) silt loam; weak coarse subangular blocky structure; friable; few distinct very dark grayish brown (10YR 3/2) organic coatings in root channels; common medium prominent yellowish brown (10YR 5/6) and few medium prominent brown (7.5YR 4/4) iron masses in the matrix; neutral; clear smooth boundary.

Cg—50 to 60 inches (127 to 152 cm); light brownish gray (2.5Y 6/2) silt loam; massive; friable; common fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 50 inches (61 to 127 cm)

Thickness of the solum: 24 to 50 inches (61 to 127 cm)

Ap, A, or AB horizon:

Hue—7.5YR, 10YR, 2.5Y, or N

Value—2 to 3

Chroma—0 to 2

Texture—silt loam; mucky silt loam in some subhorizons

Bg horizon:

Hue—7.5YR, 10YR, 2.5Y, or N

Value—2 to 6

Chroma—0 to 4

Texture—silt loam, loam, sandy loam, or silty clay loam

Cg horizon:

Hue—10YR, 2.5Y, 5Y, or N

Value—2 to 6

Chroma—0 to 4

Texture—silt loam or loam; strata of silty clay loam or sandy loam in some pedons

8076A—Otter silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Otter and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that contain more clay in the subsoil

Dissimilar soils:

- The well drained Huntsville soils in the slightly higher positions

Properties and Qualities of the Otter Soil

Parent material: Alluvium

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 10.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.2 foot, January through May

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

Palsgrove Series

Drainage class: Well drained

Landform: Hillslopes

Parent material: Loess over residuum derived from limestone or dolomite

Slope range: 2 to 18 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Palsgrove silt loam; 2,355 feet south and 275 feet east of the center of sec. 24, T. 23 N., R. 9 E.; Ogle County, Illinois; USGS Grand Detour topographic quadrangle; lat. 41 degrees 57 minutes 38 seconds N. and long. 89 degrees 24 minutes 15 seconds W., NAD 27:

Ap—0 to 11 inches (0 to 28 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine and medium granular structure; friable; common roots; slightly acid; abrupt smooth boundary.

Bt1—11 to 17 inches (28 to 43 cm); dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine and medium subangular blocky; friable; few roots; common distinct brown (10YR 4/3) clay films and few prominent light gray (10YR 7/1) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.

Bt2—17 to 28 inches (43 to 71 cm); mixed yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) silty clay loam; weak medium prismatic structure

- parting to moderate fine and medium subangular blocky; friable; few roots; common distinct brown (10YR 4/3) clay films and few prominent light gray (10YR 7/1) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- Bt3—28 to 35 inches (71 to 89 cm); mixed yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) silty clay loam; moderate coarse prismatic structure parting to moderate medium and coarse subangular blocky; friable; few roots; common distinct brown (10YR 4/3) clay films and few prominent light gray (10YR 7/1) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.
- Bt4—35 to 48 inches (89 to 122 cm); mixed yellowish brown (10YR 5/4) and dark yellowish brown (10YR 4/4) silty clay loam; moderate coarse prismatic structure; friable; few roots; common distinct brown (10YR 4/3) clay films on faces of peds; few fine black (7.5YR 2.5/1) masses of iron-manganese oxide in the matrix; moderately acid; clear smooth boundary.
- 2Bt5—48 to 55 inches (122 to 140 cm); mixed reddish brown (5YR 4/4) and dark reddish brown (5YR 3/3) clay; moderate coarse prismatic structure; very firm; few fine and very fine roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; 2 percent cherty gravel; neutral; clear smooth boundary.
- 2R—55 inches (140 cm); level-bedded dolomitic limestone; partly disintegrated in the upper 3 to 5 inches (8 to 13 cm).

Range in Characteristics

- Thickness of the loess:* 36 to 50 inches (91 to 127 cm)
Thickness of the residuum: 2 to 20 inches (5 to 51 cm)
Thickness of the solum: 40 to 60 inches (102 to 152 cm)

Ap or A horizon:

- Hue—10YR
 Value—2 to 4
 Chroma—2 or 3
 Texture—silt loam or silty clay loam

E and/or BE horizon (where present):

- Value—4 or 5
 Chroma—2 or 3
 Texture—silt loam

Bt horizon:

- Hue—10YR
 Value—4 or 5
 Chroma—3 or 4
 Texture—silty clay loam or silt loam

2Bt or 2BC horizon:

- Hue—2.5YR, 5YR, 7.5YR, or 10YR
 Value—3 to 5
 Chroma—3 to 8
 Texture—clay

429B—Palsgrove silt loam, 2 to 5 percent slopes

Setting

Landform: Hillslopes

Position on the landform: Summits and shoulders

Map Unit Composition

Palsgrove and similar soils: 92 percent

Dissimilar soils: 8 percent

Components of Minor Extent*Similar soils:*

- Soils that are underlain by loamy or clayey till above the underlying bedrock
- Soils that have no residuum in the profile
- Soils that have limestone bedrock at a depth of more than 60 inches

Dissimilar soils:

- Soils that have limestone bedrock within a depth of 20 inches

Properties and Qualities of the Palsgrove Soil

Parent material: Loess over residuum derived from limestone and dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Slow or moderately slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 10.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

429C2—Palsgrove silt loam, 5 to 10 percent slopes, eroded**Setting**

Landform: Hillslopes

Position on the landform: Shoulders and backslopes

Map Unit Composition

Palsgrove and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils that are underlain by loamy or clayey till above the underlying bedrock
- Soils that have no residuum in the profile

Dissimilar soils:

- Soils that have limestone bedrock within a depth of 20 inches
- Severely eroded soils that have a surface layer of silty clay loam

Properties and Qualities of the Palsgrove Soil

Parent material: Loess over residuum derived from limestone and dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Slow or moderately slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 9.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 1.5 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

429D2—Palsgrove silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Shoulders and backslopes

Map Unit Composition

Palsgrove and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that are underlain by loamy or clayey till above the underlying bedrock
- Soils that have no residuum in the profile

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam
- Soils that have limestone bedrock within a depth of 20 inches

Properties and Qualities of the Palsgrove Soil

Parent material: Loess over residuum derived from limestone and dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Slow or moderately slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 9.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 1.5 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

928D2—NewGlarus-Palsgrove silt loams, 10 to 18 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

NewGlarus and similar soils: 50 percent

Palsgrove and similar soils: 40 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have limestone bedrock at a depth of less than 20 inches or more than 40 inches
- Severely eroded soils that have a surface layer of silty clay loam
- Soils that are underlain by loamy or clayey till above the underlying bedrock
- Soils that have no residuum in the profile

Dissimilar soils:

- The somewhat excessively drained Elizabeth soils in positions similar to those of the NewGlarus and Palsgrove soils
- Soils that do not have bedrock within a depth of 60 inches

Properties and Qualities of the NewGlarus Soil

Parent material: Loess over clayey pedisidiment over loamy residuum derived from dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Slow to moderate

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Available water capacity: About 6.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Palsgrove Soil

Parent material: Loess over residuum derived from limestone and dolomite

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Slow or moderately slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 9.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: NewGlarus—3e; Palsgrove—3e

Prime farmland category: Not prime farmland

Hydric soil status: NewGlarus—not hydric; Palsgrove—not hydric

Parkway Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess or other silty material and the underlying till

Slope range: 2 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Parkway soil in map unit 686C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Parkway silt loam, 2 to 5 percent slopes (fig. 8); at an elevation of 632 feet (193 meters); 1,220 feet north and 1,340 feet west of the southeast corner of sec. 15, T. 17 N., R. 3 E.; Henry County, Illinois; USGS Geneseo topographic quadrangle; lat. 41 degrees 27 minutes 26 seconds N. and long. 90 degrees 07 minutes 49 seconds W., NAD 27:

Ap—0 to 7 inches (0 to 18 cm); very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; moderately acid; abrupt smooth boundary.

A1—7 to 14 inches (18 to 36 cm); very dark gray (10YR 3/1) silt loam, grayish brown (10YR 5/2) dry; weak fine and medium subangular blocky structure; friable; moderately acid; gradual smooth boundary.

A2—14 to 18 inches (36 to 46 cm); dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; weak fine and medium subangular blocky structure; friable; moderately acid; clear smooth boundary.



Figure 8.—A profile of a Parkway soil.

- BA—18 to 22 inches (46 to 56 cm); brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; common very dark grayish brown (10YR 3/2) organic coatings on faces of peds; moderately acid; clear smooth boundary.
- Bt1—22 to 28 inches (56 to 71 cm); brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; common faint dark brown (10YR 3/3) clay films on faces of peds; neutral; gradual wavy boundary.
- Bt2—28 to 39 inches (71 to 99 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common faint brown (10YR 4/3) clay films on faces of peds; neutral; gradual wavy boundary.
- Bt3—39 to 49 inches (99 to 124 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common faint dark

yellowish brown (10YR 4/4) clay films on faces of peds; neutral; clear wavy boundary.

2BC—49 to 60 inches (124 to 152 cm); light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; friable; 5 percent gravel; slightly effervescent; moderately alkaline; clear wavy boundary.

2C—60 to 80 inches (152 to 203 cm); light olive brown (2.5Y 4/4) loam; massive; friable; about 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches (18 to 51 cm)

Depth to the base of the argillic horizon: 45 to 60 inches (114 to 152 cm)

Depth to carbonates: 40 to 60 inches (102 to 152 cm)

Ap, A, or AB horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam

Bt horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam or silt loam

2Bt, 2BC, or 2C horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—4 or 5

Chroma—3 to 8

Texture—clay loam, loam, silty clay loam, or silt loam

686B—Parkway silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Shoulders and summits

Map Unit Composition

Parkway and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have more than 60 inches of silty material over the calcareous till
- Soils that have a substratum of reddish loam or yellowish brown silt loam

Dissimilar soils:

- Soils that have limestone bedrock at a depth of 20 to 40 inches
- The poorly drained Drummer soils on toeslopes
- The somewhat poorly drained Elburn soils on footslopes

Properties and Qualities of the Parkway Soil

Parent material: Loess or other silty material and the underlying till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

686C2—Parkway silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Shoulders

Map Unit Composition

Parkway and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a substratum of reddish loam or yellowish brown silt loam
- Soils that have a lighter colored surface layer
- Soils that have calcareous till at a depth of less than 40 inches

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam
- Soils that have limestone bedrock at a depth of 20 to 40 inches
- The somewhat poorly drained Elburn soils on footslopes

Properties and Qualities of the Parkway Soil

Parent material: Loess or other silty material and the underlying till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

Pecatonica Series

Drainage class: Well drained
Landform: Ground moraines
Parent material: Thin layer of loess over a paleosol that formed in till
Slope range: 2 to 10 percent
Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Pecatonica silt loam, 5 to 10 percent slopes, eroded; 2,140 feet east and 1,760 feet north of the southwest corner of sec. 1, T. 22 N., R. 4 E.; Whiteside County, Illinois; USGS Fair Haven topographic quadrangle; lat. 41 degrees 55 minutes 17 seconds N. and long. 89 degrees 59 minutes 24 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; weak medium subangular blocky structure parting to weak medium granular; friable; few yellowish brown (10YR 5/4) fragments of subsoil material; common faint dark brown (10YR 3/3) organic coatings on faces of peds; neutral; abrupt smooth boundary.
- Bt1—7 to 13 inches (18 to 33 cm); yellowish brown (10YR 5/4) silt loam; moderate medium and fine subangular blocky structure; friable; few distinct brown (10YR 4/3) clay films on faces of peds and few distinct dark brown (10YR 3/3) organic coatings in root channels; moderately acid; clear smooth boundary.
- Bt2—13 to 19 inches (33 to 48 cm); yellowish brown (10YR 5/6) silt loam; moderate fine subangular blocky structure; friable; common distinct brown (10YR 4/3) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.
- 2Bt3—19 to 23 inches (48 to 58 cm); strong brown (7.5YR 5/6) loam; moderate medium and fine subangular blocky structure; friable; common distinct brown (7.5YR 4/4) clay films on faces of peds; strongly acid; clear smooth boundary.
- 2Bt4—23 to 29 inches (58 to 74 cm); strong brown (7.5YR 5/6) clay loam; moderate medium subangular blocky structure; firm; common fine prominent reddish brown (5YR 4/4) clay films on faces of peds; few chert pebbles and igneous pebbles; moderately acid; clear smooth boundary.
- 2Bt5—29 to 44 inches (74 to 112 cm); yellowish red (5YR 4/6) clay loam; moderate coarse subangular blocky structure; firm; few distinct reddish brown (5YR 4/4) clay films on faces of peds; few chert pebbles and igneous pebbles; moderately acid; clear smooth boundary.
- 2Bt6—44 to 60 inches (112 to 152 cm); yellowish red (5YR 4/6) clay loam; weak coarse subangular blocky structure; firm; few distinct reddish brown (5YR 4/4) clay films on faces of peds; few chert pebbles and igneous pebbles; strata of gravelly sandy loam at a depth of 56 inches; moderately acid.

Range in Characteristics

Thickness of the loess: 15 to 25 inches (38 to 64 cm)

Thickness of the solum: More than 60 inches (152 cm)

Ap or A horizon:

Hue—10YR

Value—4

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 or 5

Chroma—4 to 6

Texture—silt loam or silty clay loam

2Bt or 2BC horizon:

Hue—5YR or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—clay loam, loam, sandy loam, or sandy clay loam or the gravelly analogs of these textures

2C horizon:

Hue—5YR

Value—4 to 6

Chroma—4 to 6

Texture—loam or gravelly loam

21B—Pecatonica silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Shoulders and summits

Map Unit Composition

Pecatonica and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 24 to 72 inches
- Soils that have more than 30 inches of loess over the underlying till
- Soils that have calcareous material within a depth of 42 inches

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam or clay loam

Properties and Qualities of the Pecatonica Soil

Parent material: Thin layer of loess over a paleosol that formed in loamy till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

21C2—Pecatonica silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Pecatonica and similar soils: 90 percent
 Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 24 to 72 inches
- Soils that have more than 30 inches of loess over the underlying till
- Soils that have calcareous material within a depth of 42 inches

Dissimilar soils:

- Severely eroded soils that have a surface layer of silty clay loam or clay loam
- The well drained Woodbine soils on backslopes

Properties and Qualities of the Pecatonica Soil

Parent material: Thin layer of loess over a paleosol that formed in loamy till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 11.0 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

864—Pits, quarries

- This map unit consists of excavated areas of limestone bedrock from which material has been removed. The remaining floors are nearly level, and the sidewalls are very steep or nearly vertical.

865—Pits, gravel

- This map unit consists of excavated areas of gravelly outwash deposits from which gravelly and sandy material has been removed. The remaining floors are nearly level, and the sidewalls are very steep or nearly vertical. Areas of this map unit generally do not support vegetation.

Plano Series

Drainage class: Well drained

Landform: Outwash plains and stream terraces

Parent material: Loess over stratified loamy outwash

Slope range: 0 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Plano soil in map unit 199C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Plano silt loam, 0 to 2 percent slopes; at an elevation of 715 feet (218 meters); 1,200 feet south and 1,920 feet east of the northwest corner of sec. 13, T. 12 N., R. 7 E.; Stark County, Illinois; USGS Castleton topographic quadrangle; lat. 41 degrees 01 minute 45 seconds N. and long. 89 degrees 39 minutes 00 seconds W., NAD 27:

Ap—0 to 9 inches (0 to 23 cm); very dark brown (10YR 2/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; few very fine roots; slightly acid; clear smooth boundary.

A—9 to 14 inches (23 to 36 cm); dark brown (10YR 3/3) silt loam, brown (10YR 5/3) dry; moderate fine granular structure; friable; many very fine roots; slightly acid; clear smooth boundary.

Bt1—14 to 19 inches (36 to 48 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct dark brown (10YR 3/3) organo-clay films on faces of peds; slightly acid; clear smooth boundary.

Bt2—19 to 31 inches (48 to 79 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; slightly acid; clear smooth boundary.

Bt3—31 to 43 inches (79 to 109 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on

faces of peds; common distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; few fine faint yellowish brown (10YR 5/4) masses of iron in the matrix; slightly acid; clear smooth boundary.

Bt4—43 to 49 inches (109 to 124 cm); dark yellowish brown (10YR 4/4) silt loam; moderate medium prismatic structure; friable; few very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; few distinct very pale brown (10YR 7/3) (dry) silt coatings on faces of peds; slightly acid; clear smooth boundary.

2Bt5—49 to 53 inches (124 to 135 cm); dark yellowish brown (10YR 4/4) clay loam; weak medium prismatic structure; friable; few fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; neutral; clear smooth boundary.

2BC—53 to 60 inches (135 to 152 cm); brown (7.5YR 4/4) sandy loam; weak medium subangular blocky structure; very friable; many distinct dark yellowish brown (10YR 3/4) clay bridges between sand grains; about 5 percent gravel; neutral; gradual smooth boundary.

2C—60 to 72 inches (152 to 183 cm); stratified yellowish brown (10YR 5/6) and brown (7.5YR 4/4) sandy loam, loam, and loamy sand; massive; friable; about 12 percent gravel; neutral.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches (18 to 51 cm)

Depth to the base of the argillic horizon: 44 to 70 inches (112 to 178 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam

AB or BA horizon (where present):

Hue—10YR

Value—3 or 4

Chroma—2 to 4

Texture—silt loam or silty clay loam

Bt horizon (upper and middle parts):

Hue—10YR

Value—4 or 5

Chroma—3 or 4

Texture—silty clay loam

Bt horizon (lower part):

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 4

Texture—silty clay loam or silt loam

2Bt or 2BC horizon:

Hue—7.5YR or 10YR

Value—3 to 5

Chroma—2 to 6

Texture—silt loam, loam, sandy loam, clay loam, or sandy clay loam

2C horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—3 to 5

Chroma—3 to 6

Texture—loam, loamy sand, sandy loam, or silt loam; commonly stratified

Reaction—moderately acid to moderately alkaline

199A—Plano silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains and stream terraces

Position on the landform: Summits

Map Unit Composition

Plano and similar soils: 94 percent

Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:

- Soils that have less than 40 inches or more than 60 inches of loess over the underlying outwash
- Soils that have a thicker surface layer; in depressions and drainageways
- Soils that have a seasonal high water table at a depth of 48 to 72 inches

Dissimilar soils:

- The somewhat poorly drained Elburn soils in shallow depressions and drainageways
- The poorly drained Sable soils on summits
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Plano Soil

Parent material: Loess over stratified loamy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

199B—Plano silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces and outwash plains

Position on the landform: Summits and shoulders

Map Unit Composition

Plano and similar soils: 91 percent

Dissimilar soils: 9 percent

Components of Minor Extent

Similar soils:

- Soils that have less than 40 inches or more than 60 inches of loess over the underlying outwash
- Soils that have a thicker surface layer; in depressions and drainageways
- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have limestone bedrock at a depth of 40 to 60 inches

Dissimilar soils:

- The somewhat poorly drained Elburn soils in shallow depressions and drainageways
- The poorly drained Drummer soils on toeslopes
- The poorly drained Sable soils on toeslopes

Properties and Qualities of the Plano Soil

Parent material: Loess over outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 5.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

199C2—Plano silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces

Position on the landform: Shoulders and backslopes

Map Unit Composition

Plano and similar soils: 91 percent

Dissimilar soils: 9 percent

Components of Minor Extent

Similar soils:

- Soils that have less than 40 inches or more than 60 inches of loess over the underlying outwash
- Soils that have a thicker surface layer; in depressions and drainageways

- Soils that have a seasonal high water table at a depth of 48 to 72 inches
- Soils that have limestone bedrock at a depth of 40 to 60 inches

Dissimilar soils:

- The somewhat poorly drained Atterberry and Muscatune soils on summits
- The poorly drained Drummer and Sable soils on toeslopes
- The somewhat poorly drained Elburn and Kendall soils on summits and footslopes

Properties and Qualities of the Plano Soil

Parent material: Loess and the underlying outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.8 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Proctor Series

Drainage class: Well drained

Landform: Outwash plains and stream terraces

Parent material: Loess over outwash

Slope range: 0 to 10 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Proctor soil in map unit 148C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-silty, mixed, superactive, mesic Mollic Hapludalf.

Typical Pedon

Proctor silt loam, 2 to 5 percent slopes; at an elevation of 705 feet (215 meters); 204 feet north and 2,460 feet west of the southeast corner of sec. 3, T. 11 N., R. 6 E.; Peoria County, Illinois; USGS Princeville topographic quadrangle; lat. 40 degrees 57 minutes 37 seconds N. and long. 89 degrees 47 minutes 59 seconds W., NAD 27:

Ap—0 to 8 inches (0 to 20 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine roots; moderately acid; clear smooth boundary.

A—8 to 11 inches (20 to 28 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate fine granular structure; friable; common very fine roots; neutral; clear smooth boundary.

- Bt1—11 to 16 inches (28 to 41 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine subangular blocky structure; friable; common very fine roots; common distinct very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt2—16 to 23 inches (41 to 58 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate very fine and fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt3—23 to 28 inches (58 to 71 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; common very fine roots; many distinct brown (10YR 4/3) clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt4—28 to 33 inches (71 to 84 cm); yellowish brown (10YR 5/4) loam; moderate medium subangular blocky structure; friable; few very fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- 2Bt5—33 to 46 inches (84 to 117 cm); strong brown (7.5YR 5/6), stratified loam and sandy loam; weak coarse subangular blocky structure; very friable; few very fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; slightly acid; gradual smooth boundary.
- 2C—46 to 60 inches (117 to 152 cm); strong brown (7.5YR 5/6), stratified sandy loam and loamy sand; massive; very friable; slightly acid.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 20 inches (18 to 51 cm)

Depth to the base of the argillic horizon: 40 to 65 inches (102 to 165 cm)

Ap, A, and/or AB horizon(s):

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam or silty clay loam

Reaction—strongly acid to slightly alkaline

Bt and/or BA horizon(s):

Hue—7.5YR or 10YR

Value—3 to 6

Chroma—3 to 6

Texture—silty clay loam or silt loam

Reaction—moderately acid to neutral

2Bt and/or 2BC horizon(s):

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—3 to 6

Texture—silty clay loam, silt loam, clay loam, sandy clay loam, loam, or sandy loam; stratified in some pedons

Reaction—moderately acid to neutral

2C horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—3 to 6

Texture—sandy loam, loam, or silt loam; thin strata of loamy sand or sand

Reaction—moderately acid to slightly alkaline

148A—Proctor silt loam, 0 to 2 percent slopes***Setting***

Landform: Outwash plains and stream terraces

Position on the landform: Summits

Map Unit Composition

Proctor and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have limestone bedrock at a depth of 40 to 60 inches

Dissimilar soils:

- The somewhat poorly drained Millbrook soils in shallow depressions or drainageways
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Proctor Soil

Parent material: Loess or other silty material and the underlying outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 4.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

148B—Proctor silt loam, 2 to 5 percent slopes***Setting***

Landform: Outwash plains and stream terraces

Position on the landform: Shoulders and summits

Map Unit Composition

Proctor and similar soils: 85 percent

Dissimilar soils: 15 percent

Components of Minor Extent

Similar soils:

- Soils that have limestone bedrock at a depth of 40 to 60 inches

Dissimilar soils:

- The somewhat poorly drained Millbrook soils in shallow depressions or drainageways
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Proctor Soil*Parent material:* Loess over outwash*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate or moderately rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 10.0 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 3.0 to 4.0 percent*Shrink-swell potential:* Moderate*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* Moderate for steel and concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 2e*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric**148C2—Proctor silt loam, 5 to 10 percent slopes, eroded*****Setting****Landform:* Stream terraces and outwash plains*Position on the landform:* Backslopes and shoulders***Map Unit Composition***

Proctor and similar soils: 85 percent

Dissimilar soils: 15 percent

Components of Minor Extent*Similar soils:*

- Soils that have limestone bedrock at a depth of 40 to 60 inches

Dissimilar soils:

- The somewhat poorly drained Millbrook soils in shallow depressions or drainageways
- The poorly drained Drummer soils on toeslopes

Properties and Qualities of the Proctor Soil*Parent material:* Loess over outwash*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate or moderately rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 10.3 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 3.5 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Radford Series

Drainage class: Somewhat poorly drained

Landform: Flood plains

Parent material: Silty alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls

Typical Pedon

Radford silt loam, 0 to 2 percent slopes, occasionally flooded; 1,109 feet west and 1,254 feet south of the northeast corner of sec. 23, T. 17 N., R. 8 E.; Bureau County, Illinois; USGS Buda NE topographic quadrangle; lat. 41 degrees 26 minutes 54 seconds N. and long. 89 degrees 32 minutes 04 seconds W., NAD 27:

Ap—0 to 9 inches (0 to 23 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.

A—9 to 21 inches (23 to 53 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium granular structure; friable; common fine roots; few fine dark masses of iron-manganese oxide throughout; slightly acid; gradual smooth boundary.

C—21 to 29 inches (53 to 74 cm); stratified very dark gray (10YR 3/1) silt loam and brown (10YR 5/3) silty clay loam; weak medium subangular blocky structure; friable; few fine roots; common fine dark masses of iron-manganese oxide throughout; slightly acid; clear smooth boundary.

Ab1—29 to 36 inches (74 to 91 cm); black (10YR 2/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; few medium faint very dark grayish brown (10YR 3/2) masses of iron-manganese in the matrix; few very fine dark masses of iron-manganese oxide throughout; slightly acid; clear smooth boundary.

Ab2—36 to 43 inches (91 to 109 cm); black (10YR 2/1) silty clay loam; weak medium subangular blocky structure; friable; few fine faint very dark grayish brown (10YR 3/2) masses of iron-manganese oxide in the matrix; few very fine dark masses of iron-manganese oxide throughout; neutral; clear smooth boundary.

Ab3—43 to 60 inches (109 to 152 cm); black (10YR 2/1) silty clay loam; moderate medium prismatic structure parting to moderate medium subangular blocky; friable; few fine faint dark gray (10YR 4/1) iron depletions in the matrix; few very fine dark masses of iron-manganese oxide throughout; neutral.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 24 inches (25 to 61 cm)

Depth to the buried soil: 20 to 40 inches (51 to 102 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

C horizon:

Hue—10YR

Value—2 to 6

Chroma—1 or 2; 3 in thin strata

Texture—silt loam; thin strata of silty clay loam

Ab horizon:

Hue—10YR or N

Value—2 to 3

Chroma—0 or 1

Texture—silt loam, silty clay loam, clay loam, or loam

Bgb horizon (where present):

Hue—10YR, 2.5Y, 5Y, or N

Value—3 to 6

Chroma—0 to 2

Texture—silt loam, silty clay loam, clay loam, or loam

3074A—Radford silt loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Radford and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored or thicker surface layer
- Soils that do not have a buried soil within a depth of 40 inches
- Soils that have bedrock at a depth of less than 20 inches or more than 40 inches

Dissimilar soils:

- The poorly drained Sawmill soils in the larger drainageways and on the major flood plains

Properties and Qualities of the Radford Soil

Parent material: Alluvium

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 1.0 foot, January through May

Ponding: None

Frequency and most likely period of flooding: Frequent, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w

Prime farmland category: Prime farmland where protected from flooding or not frequently flooded during the growing season

Hydric soil status: Not hydric

8074A—Radford silt loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Radford and similar soils: 88 percent

Dissimilar soils: 12 percent

Components of Minor Extent

Similar soils:

- Soils that have less clay in the subsoil
- Soils that have mucky or sandy textures in the subsoil
- Soils in which the dark surface soil is 10 to 24 inches thick
- Soils that have more clay

Dissimilar soils:

- The poorly drained Sawmill soils in the larger drainageways and on the major flood plains

Properties and Qualities of the Radford Soil

Parent material: Silty alluvium

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.5 to 5.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 1.0 foot, January through May

Ponding: None

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w
Prime farmland category: Prime farmland
Hydric soil status: Not hydric

Rodman Series

Drainage class: Excessively drained
Landform: Stream terraces
Parent material: Sandy and gravelly glaciofluvial deposits
Slope range: 4 to 20 percent
Taxonomic classification: Sandy-skeletal, mixed, mesic Typic Hapludolls

Typical Pedon

Rodman gravelly sandy loam, 12 to 20 percent slopes; at an elevation of 530 feet (162 meters); 2,180 feet north and 1,275 feet west of the southeast corner of sec. 19, T. 23 N., R. 5 W.; Tazewell County, Illinois; USGS South Pekin topographic quadrangle; lat. 40 degrees 25 minutes 38 seconds N. and long. 89 degrees 42 minutes 17 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); very dark grayish brown (10YR 3/2) gravelly sandy loam, brown (10YR 4/3) dry; weak fine granular structure; very friable; few very fine roots; 15 percent gravel; neutral; clear smooth boundary.
- Bw—7 to 11 inches (18 to 28 cm); brown (10YR 4/3) gravelly loam; weak fine granular structure; very friable; few fine roots; 25 percent gravel; neutral; abrupt smooth boundary.
- C—11 to 60 inches (28 to 152 cm); brown (10YR 5/3), stratified very gravelly coarse sand and coarse sand; single grain; loose; 40 percent gravel; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 6 to 12 inches (15 to 38 cm)
Depth to carbonates: 10 to 15 inches (25 to 38 cm)
Thickness of the solum: 10 to 15 inches (25 to 38 cm)

A or Ap horizon:

Hue—7.5YR or 10YR
Value—2 to 3
Chroma—1 or 2
Texture—gravelly sandy loam
Content of gravel—10 to 25 percent

Bw horizon:

Hue—7.5YR or 10YR
Value—3 or 4
Chroma—2 or 3
Texture—loam, sandy loam, gravelly loam, or gravelly sandy loam
Content of gravel—10 to 35 percent

C horizon:

Hue—10YR
Value—3 to 5

Chroma—1 to 4

Texture—stratified sand to extremely gravelly coarse sand

Content of gravel—35 to 70 percent

735C2—Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded

Setting

Landform: Stream terraces

Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent

Rodman and similar soils: 31 percent

Fox and similar soils: 29 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 3.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits

Drainage class: Excessively drained

Slowest permeability within a depth of 40 inches: Moderately rapid

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 2.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—3e; Rodman—4s; Fox—3e
Prime farmland category: Not prime farmland
Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

735D2—Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded

Setting

Landform: Stream terraces
Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent
 Rodman and similar soils: 31 percent
 Fox and similar soils: 29 percent
 Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash
Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 3.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits
Drainage class: Excessively drained
Slowest permeability within a depth of 40 inches: Moderately rapid
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 2.6 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 4.0 percent
Shrink-swell potential: Low
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Low
Hazard of corrosion: Low for steel and concrete
Surface runoff class: Low
Susceptibility to water erosion: Low
Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Very rapid
Depth to restrictive feature: More than 80 inches
Available water capacity: About 7.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: Medium
Susceptibility to water erosion: High
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—4e; Rodman—4s; Fox—3e

Prime farmland category: Not prime farmland

Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

735E2—Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded

Setting

Landform: Stream terraces

Position on the landform: Backslopes

Map Unit Composition

Casco and similar soils: 35 percent

Rodman and similar soils: 31 percent

Fox and similar soils: 29 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have less gravel and more sand or silt in the lower layers

Dissimilar soils:

- Soils underlain by till or limestone bedrock within a depth of 60 inches

Properties and Qualities of the Casco Soil

Parent material: Loamy alluvium over calcareous, stratified sandy outwash

Drainage class: Somewhat excessively drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 3.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Properties and Qualities of the Rodman Soil

Parent material: Sandy and gravelly glaciofluvial deposits

Drainage class: Excessively drained

Slowest permeability within a depth of 40 inches: Moderately rapid

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 2.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Low

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Low

Hazard of corrosion: Low for steel and concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Negligible

Properties and Qualities of the Fox Soil

Parent material: Loamy alluvium and/or a thin layer of loess over calcareous, stratified sandy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 7.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: Casco—6e; Rodman—6s; Fox—4e

Prime farmland category: Not prime farmland

Hydric soil status: Casco—not hydric; Rodman—not hydric; Fox—not hydric

Rozetta Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess

Slope range: 0 to 5 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Rozetta silt loam, 0 to 2 percent slopes; at an elevation of 890 feet (271 meters); 150 feet south and 500 feet east of the center of sec. 18, T. 27 N., R. 6 E.; Stephenson County, Illinois; USGS Pearl City topographic quadrangle; lat. 42 degrees 20 minutes 00 seconds N. and long. 89 degrees 51 minutes 19 seconds W., NAD 27:

A—0 to 4 inches (0 to 10 cm); very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; weak medium granular structure; friable; many fine roots throughout; moderately acid; clear wavy boundary.

E—4 to 11 inches (10 to 28 cm); dark grayish brown (10YR 4/2) silt loam; weak medium platy structure; friable; many fine roots throughout; strongly acid; clear smooth boundary.

BE—11 to 14 inches (28 to 36 cm); brown (10YR 4/3) silty clay loam; weak medium subangular blocky structure; firm; many fine roots between peds; few faint brown (10YR 5/3) (dry) silt coatings on faces of peds; strongly acid; clear smooth boundary.

- Bt1—14 to 21 inches (36 to 53 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; firm; many fine roots between peds; many faint brown (10YR 5/3) clay films on faces of peds; strongly acid; clear smooth boundary.
- Bt2—21 to 39 inches (53 to 99 cm); brown (10YR 5/3) silty clay loam; moderate medium and coarse subangular blocky structure; firm; common fine roots between peds; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; common faint pale brown (10YR 6/3) (dry) silt coatings on faces of peds; few medium faint grayish brown (10YR 5/2) iron depletions in the matrix; common medium faint light yellowish brown (10YR 6/4) and brown (10YR 4/3) masses of iron in the matrix; strongly acid; clear smooth boundary.
- Bt3—39 to 50 inches (99 to 127 cm); yellowish brown (10YR 5/4) silty clay loam; weak coarse subangular blocky structure; firm; common fine roots throughout; few faint brown (10YR 4/3) clay films on faces of peds; common medium faint pale brown (10YR 6/3) and common medium distinct grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear smooth boundary.
- C—50 to 60 inches (127 to 152 cm); yellowish brown (10YR 5/4) silt loam; massive; friable; common medium distinct dark grayish brown (10YR 4/2) iron depletions in the matrix; slightly acid.

Range in Characteristics

Thickness of the solum: 42 to 72 inches (107 to 183 cm)

Ap or A horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 3

Texture—silt loam

E horizon:

Hue—10YR

Value—4 to 6

Chroma—2 or 3

Texture—silt loam

Bt horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—silty clay loam

C horizon:

Hue—10YR

Value—4 to 6

Chroma—2 to 6

Texture—silt loam or silty clay loam

279A—Rozetta silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits

Map Unit Composition

Rozetta and similar soils: 98 percent

Dissimilar soils: 2 percent

Components of Minor Extent*Similar soils:*

- Soils that have a darker surface layer
- Soils that have stratified sandy material or red till at a depth of 40 to 60 inches
- Soils that have a seasonal high water table at a depth of 24 to 48 inches

Dissimilar soils:

- The somewhat poorly drained Atterberry and Stronghurst soils in shallow depressions

Properties and Qualities of the Rozetta Soil

Parent material: Loess

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 4.0 feet,
February through April

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

279B—Rozetta silt loam, 2 to 5 percent slopes**Setting**

Landform: Ground moraines

Position on the landform: Shoulders and summits

Map Unit Composition

Rozetta and similar soils: 91 percent

Dissimilar soils: 9 percent

Components of Minor Extent*Similar soils:*

- Soils that have a darker surface layer
- Soils that have stratified sandy material or red till at a depth of 40 to 60 inches
- Soils that have a seasonal high water table at a depth of 24 to 48 inches

Dissimilar soils:

- The somewhat poorly drained Atterberry and Stronghurst soils in shallow depressions and drainageways
- The poorly drained Sable soils on summits and toeslopes

Properties and Qualities of the Rozetta Soil*Parent material:* Loess*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 12.3 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 1.0 to 3.0 percent*Shrink-swell potential:* Moderate*Depth and months of the highest apparent seasonal high water table:* 4.0 feet,
February through April*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* Moderate for steel and high for concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Moderate*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 2e*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric***Sable Series****Drainage class:* Poorly drained*Landform:* Ground moraines*Parent material:* Loess*Slope range:* 0 to 2 percent*Taxonomic classification:* Fine-silty, mixed, superactive, mesic Typic Endoaquolls***Typical Pedon***

Sable silty clay loam, 0 to 2 percent slopes; at an elevation of 732 feet; 1,281 feet south and 97 feet west of the northeast corner of sec. 14, T. 9 N., R. 3 W.; Warren County, Illinois; USGS Kirkwood East topographic quadrangle; lat. 40 degrees 46 minutes 22.4 seconds N. and long. 90 degrees 41 minutes 33.7 seconds W., NAD 27:

Ap—0 to 8 inches (0 to 20 cm); black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium granular structure; firm; moderately acid; abrupt smooth boundary.

A—8 to 19 inches (20 to 48 cm); black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate very fine angular blocky structure; firm; few fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese oxide concretions throughout; slightly acid; clear smooth boundary.

AB—19 to 23 inches (48 to 58 cm); very dark gray (10YR 3/1) silty clay loam, grayish brown (10YR 5/2) dry; moderate fine angular blocky structure; firm; few faint very dark grayish brown (10YR 3/2) organic coatings on faces of peds; few fine

rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese oxide concretions throughout; slightly acid; clear smooth boundary.

Bg—23 to 29 inches (58 to 74 cm); dark gray (10YR 4/1) silty clay loam; moderate fine and medium subangular blocky structure; firm; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; common fine and medium rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese oxide concretions throughout; common medium distinct brown (10YR 5/3) masses of iron accumulation in the matrix; few medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; neutral; clear smooth boundary.

Btg1—29 to 38 inches (74 to 97 cm); grayish brown (2.5Y 5/2) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few distinct dark gray (10YR 4/1) clay films on faces of peds; many fine and medium rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear wavy boundary.

Btg2—38 to 47 inches (97 to 119 cm); gray (N 5/) silt loam; weak medium prismatic structure parting to weak medium and coarse angular blocky; firm; few distinct grayish brown (10YR 5/2) clay films on faces of prisms; common fine rounded dark reddish brown (5YR 3/2) very weakly cemented iron-manganese oxide concretions throughout; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; gradual smooth boundary.

Cg—47 to 60 inches (119 to 152 cm); gray (N 6/) silt loam; massive; friable; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 12 to 24 inches (30 to 61 cm)

Thickness of the solum: 40 to 60 inches (102 to 152 cm)

Ap or A horizon:

Hue—10YR to 5Y or N

Value—2 to 3

Chroma—0 or 1

Texture—silty clay loam

Bg or Btg horizon:

Hue—10YR to 5Y or N

Value—3 to 6

Chroma—0 to 2

Texture—silty clay loam or silt loam

Cg horizon:

Hue—10YR to 5Y or N

Value—4 to 6

Chroma—0 to 2

Texture—silt loam or silty clay loam

68A—Sable silty clay loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and toeslopes

Map Unit Composition

Sable and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have sandy material at a depth of 40 to 60 inches
- Soils in which the surface layer is less than 10 inches thick

Dissimilar soils:

- Soils that have a seasonal high water table at a depth of more than 24 inches
- Soils that have a surface layer of sandy loam; in positions similar to those of the Sable soil
- The well drained Osco soils in gently sloping and strongly sloping areas

Properties and Qualities of the Sable Soil

Parent material: Loess

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 5.0 to 6.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.2 foot, January through May

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

Sawmill Series

Drainage class: Poorly drained

Landform: Flood plains

Parent material: Silty alluvium

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls

Typical Pedon

Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded; at an elevation of 535 feet (163 meters); 300 feet south and 750 feet east of the northwest corner of sec. 20, T. 15 N., R. 4 W.; Sangamon County, Illinois; USGS New City topographic quadrangle; lat. 39 degrees 44 minutes 34 seconds N. and long. 89 degrees 34 minutes 15 seconds W., NAD 27:

- Ap—0 to 10 inches (0 to 25 cm); very dark gray (10YR 3/1) and very dark grayish brown (10YR 3/2) silty clay loam, gray (10YR 5/1) dry; weak fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 mm in diameter; slightly acid; clear smooth boundary.
- A1—10 to 17 inches (25 to 43 cm); black (10YR 2/1) and very dark grayish brown (10YR 3/2) silty clay loam, dark gray (10YR 4/1) dry; moderate fine subangular blocky structure; firm; few fine roots; few subrounded pebbles 1 to 3 mm in diameter; few fine rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
- A2—17 to 25 inches (43 to 64 cm); black (10YR 2/1) silty clay loam, dark gray (10YR 4/1) dry; moderate fine and medium angular blocky structure; firm; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
- AB—25 to 32 inches (64 to 81 cm); very dark gray (10YR 3/1) silty clay loam, gray (10YR 5/1) dry; weak medium prismatic structure parting to moderate fine subangular blocky; firm; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral; clear smooth boundary.
- Bg—32 to 40 inches (81 to 102 cm); dark gray (10YR 4/1) silty clay loam; weak medium prismatic structure parting to moderate fine and medium angular blocky; firm; common faint very dark gray (10YR 3/1) organic coatings on faces of peds; few fine roots; few fine rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.
- Btg1—40 to 49 inches (102 to 124 cm); grayish brown (10YR 5/2) silty clay loam; moderate medium prismatic structure parting to weak medium angular blocky; firm; common distinct dark gray (10YR 4/1) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide concretions with diffuse boundaries lining root channels and pores; few fine prominent strong brown (7.5YR 5/6) and common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.
- Btg2—49 to 58 inches (124 to 147 cm); grayish brown (2.5Y 5/2) silty clay loam; moderate medium prismatic structure; firm; common distinct gray (10YR 5/1) clay films on faces of peds; few fine rounded black (7.5YR 2.5/1) weakly cemented iron-manganese oxide concretions with diffuse boundaries lining pores; few fine prominent yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; slightly alkaline; clear smooth boundary.
- Cg—58 to 65 inches (147 to 165 cm); grayish brown (2.5Y 5/2) silty clay loam; massive; firm; very dark gray (10YR 3/1) channel linings and fillings; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation lining pores; slightly alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 24 to 36 inches (61 to 91 cm)

Thickness of the solum: 36 to 60 inches (91 to 152 cm)

Ap, A, or AB horizon:

Hue—10YR, 2.5Y, 5Y, or N

Value—2 to 3

Chroma—0 to 2
Texture—silty clay loam

Bg and Btg horizons:

Hue—10YR, 2.5Y, or 5Y
Value—3 to 6
Chroma—1 or 2
Texture—silty clay loam; strata of silt loam or sandy loam in some pedons

Cg horizon:

Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or clay loam; strata of loam, silt loam, or sandy loam in some pedons

1107A—Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent
Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have less clay in the subsoil
- Soils that have mucky or sandy textures in the subsoil
- Soils in which the dark surface soil is 10 to 24 inches thick
- Soils that have more clay

Dissimilar soils:

- The well drained Huntsville soils in the slightly higher positions
- The poorly drained Millington and Otter soils in the lower areas

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.5 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 5.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.2 foot, November through June

Frequency and most likely period of flooding: Frequent, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 5w

Prime farmland category: Not prime farmland

Hydric soil status: Hydric

3107A—Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 99 percent

Dissimilar soils: 1 percent

Components of Minor Extent

Similar soils:

- Soils that have a thinner dark surface layer
- Soils that have stratified sandy material within a depth of 60 inches
- Soils that have thin layers of silty overwash on the surface
- Soils that have a seasonal high water table at a depth of more than 2 feet

Dissimilar soils:

- The well drained Huntsville soils in the slightly higher positions

Properties and Qualities of the Sawmill Soil

Parent material: Alluvium

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 12.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 5.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.2 foot, January through May

Frequency and most likely period of flooding: Frequent, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3w

Prime farmland category: Prime farmland where drained and either protected from flooding or not frequently flooded during the growing season

Hydric soil status: Hydric

8107A—Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded

Setting

Landform: Flood plains

Map Unit Composition

Sawmill and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have less clay in the subsoil
- Soils that have mucky or sandy textures in the subsoil
- Soils in which the dark surface soil is 10 to 24 inches thick
- Soils that have more clay

Dissimilar soils:

- The well drained Huntsville soils in the slightly higher positions

Properties and Qualities of the Sawmill Soil

Parent material: Silty alluvium

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 7.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.2 foot, January through May

Frequency and most likely period of flooding: Occasional, November through June

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

Schapville Series

Drainage class: Well drained

Landform: Hillslopes

Parent material: Loess over residuum derived from shale

Slope range: 5 to 10 percent

Taxonomic classification: Fine, mixed, active, mesic Oxyaquic Argiudolls

Taxadjunct features: The Schapville soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine, mixed, active, mesic Mollic Oxyaquic Hapludalfs.

Typical Pedon

Schapville silt loam, 2 to 5 percent slopes; about 860 feet south and 1,600 feet east of the northwest corner of sec. 21, T. 29 N., R. 3 E.; Jo Daviess County, Illinois; USGS Shullsburg topographic quadrangle; lat. 42 degrees 30 minutes 03 seconds N. and long. 90 degrees 10 minutes 38 seconds W., NAD 83:

- Ap—0 to 10 inches (0 to 25 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate medium platy structure parting to weak medium granular; friable; many roots; neutral (pH 7.0); abrupt smooth boundary.
- Bt1—10 to 16 inches (25 to 41 cm); dark yellowish brown (10YR 4/4) silty clay loam; moderate medium and fine subangular blocky structure; friable; many roots; common distinct brown (7.5YR 4/4) clay films on faces of peds; neutral (pH 7.0); clear smooth boundary.
- Bt2—16 to 21 inches (41 to 54 cm); dark yellowish brown (10YR 4/4) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; friable; many roots; common distinct brown (7.5YR 4/4) clay films and common distinct brown (10YR 5/3) pressure faces on faces of peds; few fine prominent yellowish brown (10YR 5/8) masses of iron in the matrix; moderately acid (pH 5.6); clear smooth boundary.
- Bt3—21 to 26 inches (54 to 66 cm); 95 percent brown (10YR 5/3) and 5 percent yellowish brown (10YR 5/4) silty clay loam; moderate medium prismatic structure parting to moderate fine subangular blocky; firm; common roots; common distinct dark yellowish brown (10YR 4/4) clay films and many distinct light brownish gray (2.5Y 6/2) pressure faces on faces of peds; few fine distinct black (10YR 2/1) iron-manganese oxide concretions throughout; moderately acid (pH 6.0); clear wavy boundary.
- 2Bt4—26 to 30 inches (66 to 76 cm); light yellowish brown (2.5Y 6/4) clay; moderate medium prismatic structure; very firm; few roots; few distinct grayish brown (2.5Y 5/2) clay films on faces of peds; many fine prominent greenish gray (5G 6/1) iron depletions and common fine distinct yellowish brown (10YR 5/6) masses of iron in the matrix; neutral (pH 7.2); clear smooth boundary.
- 2Cr—30 to 60 inches (76 to 152 cm); light gray (2.5Y 7/2) clay shale and thin layers of yellow (10YR 7/8) limestone; strongly effervescent.

Range in Characteristics

Thickness of the solum: Typically 20 to 35 inches (51 to 89 cm); ranges to 40 inches (102 cm)

Other features: Some pedons have thin layers of clay loam outwash or till between the loess or silty material and the shale. Textures coarser than very fine sand commonly make up less than 10 percent of the material but range to 15 percent.

A or Ap horizon:

Hue—10YR
Value—2 to 3
Chroma—1 or 2
Texture—silt loam

Bt horizon:

Hue—10YR
Value—4 or 5
Chroma—3 or 4
Texture—silty clay loam
Reaction—moderately acid to neutral

2Bt horizon:

Hue—2.5Y or 5Y

Value—5 or 6

Chroma—2 to 4

Texture—silty clay or clay

Other features—redoximorphic features are common

Reaction—moderately acid to neutral

2Cr horizon:

Texture—primarily calcareous silty clay or clay shale that contains layers of fragmented limestone or chert or both

418C2—Schapville silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes

Map Unit Composition

Schapville and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored and thinner surface layer
- Soils that have a seasonal high water table at a depth of 24 to 42 inches

Dissimilar soils:

- Soils that have limestone bedrock at a depth of more than 60 inches

Properties and Qualities of the Schapville Soil

Parent material: Loess over residuum derived from shale

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Very slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Available water capacity: About 6.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 3.0 to 5.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Senachwine Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Till

Slope range: 5 to 18 percent

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Senachwine silt loam, 10 to 18 percent slopes, eroded; at an elevation of 856 feet (261 meters); 1,040 feet west and 1,345 feet south of the northeast corner of sec. 21, T. 15 N., R. 8 E.; Bureau County, Illinois; USGS Wyandot topographic quadrangle; lat. 41 degrees 16 minutes 25 seconds N. and long. 89 degrees 34 minutes 18 seconds W., NAD 27:

Ap—0 to 6 inches (0 to 15 cm); mixed brown (10YR 4/3) and yellowish brown (10YR 5/4) silt loam, pale brown (10YR 6/3) dry; moderate fine granular structure; friable; common fine roots; neutral; abrupt smooth boundary.

Bt1—6 to 15 inches (15 to 38 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; common faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2Bt2—15 to 28 inches (38 to 71 cm); brown (7.5YR 5/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; many faint brown (7.5YR 4/4) clay films on faces of peds; few fine rounded black (N 2.5/) weakly cemented iron-manganese oxide concretions throughout; neutral; clear smooth boundary.

2BCt—28 to 34 inches (71 to 86 cm); brown (7.5YR 5/4) loam; weak coarse prismatic structure; firm; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; 5 percent gravel; slightly effervescent; slightly alkaline; clear smooth boundary.

2C—34 to 60 inches (86 to 152 cm); brown (7.5YR 5/4) loam; massive; firm; 5 percent gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: Less than 18 inches (46 cm)

Depth to the base of the argillic horizon: 24 to 40 inches (61 to 102 cm)

Depth to carbonates: 20 to 40 inches (51 to 102 cm)

Ap or A horizon(s):

Hue—10YR

Value—3 to 5

Chroma—1 to 4

Texture—silt loam or clay loam

Bt, 2Bt, BC, or 2BC horizon(s):

Hue—7.5YR, 10YR, or 2.5Y

Value—4 to 6

Chroma—3 to 6

Texture—silty clay loam, clay loam, or loam

C or 2C horizon:

Hue—7.5YR, 10YR, or 2.5Y

Value—5 or 6

Chroma—3 or 4

Texture—clay loam, loam, or fine sandy loam

618C2—Senachwine silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Senachwine and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils in which the solum is more than 40 inches thick

Dissimilar soils:

- The somewhat poorly drained Kendall and Millbrook soils in the less sloping positions

Properties and Qualities of the Senachwine Soil

Parent material: Till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 5.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

618C3—Senachwine clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Senachwine and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils in which the solum is more than 40 inches thick

Dissimilar soils:

- The somewhat poorly drained Kendall and Millbrook soils in the less sloping positions

Properties and Qualities of the Senachwine Soil

Parent material: Till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 4.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 2.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

618D2—Senachwine silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Senachwine and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils in which the solum is more than 40 inches thick

Dissimilar soils:

- The somewhat poorly drained Kendall and Millbrook soils in the less sloping positions

Properties and Qualities of the Senachwine Soil

Parent material: Till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 5.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Shullsburg Series

Drainage class: Somewhat poorly drained

Landform: Hillslopes

Parent material: Loess over residuum derived from shale

Slope range: 2 to 10 percent

Taxonomic classification: Fine, mixed, superactive, mesic Aquic Argiudolls

Taxadjunct features: The Shullsburg soil in map unit 745C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine, mixed, superactive, mesic Aquollic Hapludalf.

Typical Pedon

Shullsburg silt loam, in a concave area on a slope of 4 percent, in a cultivated field on a side slope in an area of dissected uplands; about 8 miles northwest of Rochester in Olmsted County, Minnesota; 1,230 feet south and 1,000 feet east of the northwest corner of sec. 3, T. 107 N., R. 15 W.:

Ap—0 to 10 inches (0 to 25 cm); black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; neutral; abrupt wavy boundary.

AB—10 to 17 inches (25 to 43 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; moderate very fine granular structure; friable; many very fine tubular pores; slightly acid; gradual irregular boundary.

Bt1—17 to 22 inches (43 to 56 cm); dark grayish brown (10YR 4/2) silty clay loam; moderate very fine subangular blocky structure; friable; many distinct very dark grayish brown (10YR 3/2) organo-clay films on all faces of peds; common medium distinct yellowish brown (10YR 5/4) iron masses in the matrix; slightly acid; clear wavy boundary.

Bt2—22 to 26 inches (56 to 66 cm); dark brown (10YR 4/3) silty clay loam; moderate fine subangular blocky structure; friable; common distinct very dark grayish brown (10YR 3/2) organo-clay films on all faces of ped; common fine faint grayish brown (10YR 5/2) iron depletions in the matrix; slightly acid; clear wavy boundary.

2Bt3—26 to 31 inches (66 to 79 cm); yellowish brown (10YR 5/6) clay; few soft fragments of greenish gray (5Y 5/1) shale; strong fine angular blocky structure; firm; many fine prominent black (10YR 2/1) organo-clay films in tubular pores and on faces of ped; slightly acid; gradual wavy boundary.

2Bt4—31 to 37 inches (79 to 94 cm); yellowish brown (10YR 5/4) clay; weak coarse prismatic structure; extremely firm; few fine and very fine tubular pores; common prominent black (10YR 2/1) organo-clay films lining pores and root channels; many medium prominent greenish gray (5GY 6/1) iron depletions in the matrix; slightly acid; gradual wavy boundary.

2Cr—37 to 60 inches (94 to 152 cm); greenish gray (5GY 6/1) shale; massive with some laminations and vertical cleavage; extremely firm; many large prominent yellowish brown (10YR 5/4) masses of iron in the matrix; slightly effervescent; slightly alkaline.

Range in Characteristics

Thickness of the solum: 20 to 40 inches (51 to 102 cm)

Ap, A, or AB horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam or silty clay loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 or 5

Chroma—2 to 4

Texture—silt loam or silty clay loam

2Bt horizon:

Hue—10YR, 2.5Y, or 5Y

Value—4 or 5

Chroma—2 to 4

Texture—silty clay or clay

2Cr horizon:

Hue—2.5Y, 5Y, 5GY, or 5BG

Value—5 or 6

Chroma—1 to 6

Texture—clay or silty clay

745B—Shullsburg silt loam, 2 to 5 percent slopes

Setting

Landform: Hillslopes

Position on the landform: Shoulders and summits

Map Unit Composition

Shullsburg and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored and thinner surface layer
- Soils that have shale at a depth of 40 to 60 inches

Dissimilar soils:

- The poorly drained Sable soils

Properties and Qualities of the Shullsburg Soil

Parent material: Loess over residuum derived from shale

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Very slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 20 to 40 inches to paralithic bedrock

Available water capacity: About 5.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 7.0 percent

Shrink-swell potential: High

Depth and months of the highest perched seasonal high water table: 1.0 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

745C2—Shullsburg silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Hillslopes

Position on the landform: Backslopes and shoulders

Map Unit Composition

Shullsburg and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored and thinner surface layer
- Soils that have shale at a depth of 40 to 60 inches

Dissimilar soils:

- The poorly drained Sable soils

Properties and Qualities of the Shullsburg Soil

Parent material: Loess over residuum derived from shale

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Very slow
Permeability below a depth of 60 inches: Very slow or slow
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Available water capacity: About 5.3 inches to a depth of 60 inches
Content of organic matter in the surface layer: 2.0 to 5.0 percent
Shrink-swell potential: High
Depth and months of the highest perched seasonal high water table: 1.0 foot, January through May
Ponding: None
Flooding: None
Potential for frost action: High
Accelerated erosion: The surface layer has been thinned by erosion.
Hazard of corrosion: Moderate for steel and low for concrete
Surface runoff class: High
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

St. Charles Series

Drainage class: Well drained
Landform: Outwash plains or stream terraces
Parent material: Loess over outwash
Slope range: 0 to 10 percent
Taxonomic classification: Fine-silty, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

St. Charles silt loam, 2 to 5 percent slopes; 80 feet north and 2,170 feet west of the southeast corner of sec. 26, T. 16 N., R. 8 E.; Bureau County, Illinois; USGS Wyand topographic quadrangle: lat. 41 degrees 20 minutes 09 seconds N. and long. 89 degrees 32 minutes 12 seconds W., NAD 83:

- Ap—0 to 8 inches (0 to 20 cm); brown (10YR 4/3) silt loam, pale brown (10YR 6/3) dry; moderate medium granular structure; friable; few fine roots; moderately acid; abrupt smooth boundary.
- Bt1—8 to 15 inches (20 to 38 cm); yellowish brown (10YR 5/4) silty clay loam; moderate fine subangular blocky structure; friable; few fine roots; many faint dark brown (10YR 3/3) organic coatings and dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt2—15 to 21 inches (38 to 53 cm); yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt3—21 to 34 inches (53 to 86 cm); yellowish brown (10YR 5/4) silty clay loam; weak medium prismatic structure parting to moderate medium subangular blocky; friable; few fine roots; many faint dark yellowish brown (10YR 4/4) clay films on faces of peds; few fine rounded dark accumulations of iron-manganese oxide; moderately acid; clear smooth boundary.
- Bt4—34 to 44 inches (86 to 112 cm); yellowish brown (10YR 5/4) silt loam; moderate medium prismatic structure parting to moderate medium subangular blocky;

friable; many faint dark yellowish brown (10YR 4/4) clay films and many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; common medium distinct brown (7.5YR 4/4) masses of iron in the matrix; moderately acid; clear smooth boundary.

Bt5—44 to 50 inches (112 to 127 cm); yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; many distinct dark yellowish brown (10YR 4/4) clay films and light gray (10YR 7/2) (dry) silt coatings on faces of peds; few fine distinct strong brown (7.5YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

2Bt6—50 to 57 inches (127 to 145 cm); yellowish brown (10YR 5/6), stratified loam, sandy loam, and silt loam; weak medium subangular blocky structure; friable; common distinct dark yellowish brown (10YR 4/4) clay films on faces of peds; moderately acid; clear smooth boundary.

2C—57 to 60 inches (145 to 152 cm); yellowish brown (10YR 5/4), stratified loam and silt loam; massive; friable; moderately acid.

Range in Characteristics

Thickness of the loess: 40 to 60 inches (102 to 152 cm)

Depth to the top of the argillic horizon: 6 to 24 inches (15 to 61 cm)

Depth to the base of the argillic horizon: More than 35 inches (89 cm)

Depth to carbonates: More than 44 inches (112 cm)

Thickness of the solum: 44 to 70 inches (112 to 178 cm)

Ap or A horizon:

Hue—10YR

Value—3 to 5

Chroma—1 to 3

Texture—silt loam

E horizon (where present):

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—silt loam

Bt or BE horizon:

Hue—10YR or 7.5YR

Value—4 or 5

Chroma—3 to 6

Texture—silty clay loam or silt loam

2Bt or 2BC horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—stratified loam, sandy loam, fine sandy loam, sandy clay loam, clay loam, or silt loam

2C horizon:

Hue—10YR or 7.5YR

Value—4 to 6

Chroma—3 to 6

Texture—stratified silt loam, loam, sandy loam, gravelly loam, or gravelly sandy loam

243A—St. Charles silt loam, 0 to 2 percent slopes***Setting***

Landform: Outwash plains and stream terraces

Position on the landform: Summits

Map Unit Composition

St. Charles and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent***Similar soils:***

- Soils that have gravel at a depth of 40 to 60 inches
- Soils that have more sand in the upper part of the subsoil
- Soils that formed entirely in silty material
- Soils that have red glacial material in the lower part of the subsoil
- Soils that have a seasonal high water table at a depth of 4 to 6 feet

Dissimilar soils:

- The somewhat poorly drained Kendall and Stronghurst soils and the poorly drained Drummer soils in drainageways and in the lower positions on the landscape

Properties and Qualities of the St. Charles Soil

Parent material: Loess over stratified loamy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.3 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 1

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

243B—St. Charles silt loam, 2 to 5 percent slopes***Setting***

Landform: Outwash plains and stream terraces

Position on the landform: Summits and shoulders

Map Unit Composition

St. Charles and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have gravel at a depth of 40 to 60 inches
- Soils that have more sand in the upper part of the subsoil
- Soils that formed entirely in silty material
- Soils that have red glacial material in the lower part of the subsoil
- Soils that have a seasonal high water table at a depth of 4 to 6 feet

Dissimilar soils:

- The somewhat poorly drained Kendall and Stronghurst soils and the poorly drained Drummer and Sawmill soils in drainageways and in the lower positions on the landscape

Properties and Qualities of the St. Charles Soil

Parent material: Loess over stratified loamy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

243C2—St. Charles silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains and stream terraces

Position on the landform: Shoulders and backslopes

Map Unit Composition

St. Charles and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have gravel at a depth of 40 to 60 inches
- Soils that have more sand in the upper part of the subsoil
- Soils that formed entirely in silty material
- Soils that have red glacial material in the lower part of the subsoil
- Soils that have a seasonal high water table at a depth of 4 to 6 feet

Dissimilar soils:

- The somewhat poorly drained Kendall and Stronghurst soils and the poorly drained Drummer soils in drainageways and in the lower positions on the landscape

Properties and Qualities of the St. Charles Soil

Parent material: Loess over stratified loamy outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.7 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: High

Hazard of corrosion: Moderate for steel and high for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Stronghurst Series

Drainage class: Somewhat poorly drained

Landform: Ground moraines

Parent material: Loess

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Aeric Endoaqualfs

Typical Pedon

Stronghurst silt loam, 0 to 2 percent slopes; 1,440 feet north and 200 feet east of the southwest corner of sec. 26, T. 15 N., R. 4 W.; Mercer County, Illinois; USGS Buffalo Prairie quadrangle; lat. 41 degrees 15 minutes 43 seconds N. and long. 90 degrees 49 minutes 20 seconds W., NAD 83:

Ap—0 to 7 inches (0 to 18 cm); dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak medium granular structure; friable; common fine roots; neutral; clear smooth boundary.

E—7 to 11 inches (18 to 28 cm); dark grayish brown (10YR 4/2) silt loam; weak fine subangular blocky structure; friable; common roots; few fine and medium dark reddish brown (5YR 3/2) iron-manganese oxide concretions throughout; slightly acid; clear smooth boundary.

BE—11 to 15 inches (28 to 38 cm); dark grayish brown (10YR 4/2) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; common faint light brownish gray (10YR 6/2) clay depletions on faces of peds; few dark reddish brown (5YR 3/2) iron-manganese oxide concretions throughout; strongly acid; clear smooth boundary.

- Bt1—15 to 22 inches (38 to 56 cm); grayish brown (10YR 5/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; few fine distinct dark yellowish brown (10YR 4/4) masses of iron in the matrix; common dark reddish brown (5YR 3/2) iron-manganese oxide concretions throughout; strongly acid; gradual smooth boundary.
- Bt2—22 to 29 inches (56 to 74 cm); brown (10YR 5/3) silty clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; many faint dark grayish brown (10YR 4/2) clay films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron and common medium faint dark grayish brown (10YR 4/2) iron depletions in the matrix; many dark reddish brown (5YR 3/2) iron-manganese oxide concretions throughout; strongly acid; gradual smooth boundary.
- Bt3—29 to 35 inches (74 to 89 cm); brown (10YR 5/3) silty clay loam; weak coarse subangular blocky structure; firm; few fine roots; common distinct dark gray (10YR 4/1) clay films on faces of peds and on surfaces along root channels; many medium faint dark yellowish brown (10YR 4/4) and many medium distinct yellowish brown (10YR 5/6) iron masses in the matrix; many dark reddish brown (5YR 3/2) iron-manganese oxide concretions throughout; strongly acid; gradual smooth boundary.
- Bt4—35 to 47 inches (89 to 119 cm); pale brown (10YR 6/3) silty clay loam; weak coarse subangular blocky structure; friable; few faint dark grayish brown (10YR 4/2) clay films on faces of peds and on surfaces along root channels; many medium distinct yellowish brown (10YR 5/6) masses of iron in the matrix; many dark reddish brown (5YR 3/2) iron-manganese oxide concretions throughout; moderately acid; gradual wavy boundary.
- C—47 to 60 inches (119 to 152 cm); mixed pale brown (10YR 6/3) and yellowish brown (10YR 5/6) silt loam; massive; friable; many soft dark reddish brown (5YR 3/2) iron-manganese oxide concretions throughout; moderately acid.

Range in Characteristics

Depth to the top of the argillic horizon: 6 to 24 inches (15 to 61 cm)

Thickness of the solum: More than 42 inches (107 cm)

Ap or A horizon:

Hue—10YR

Value—3 to 6

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR

Value—4 to 6

Chroma—2 or 3

Texture—silt loam

Bt or Btg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silty clay loam or silt loam

C or Cg horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—1 to 4

Texture—silt loam or silty clay loam

278A—Stronghurst silt loam, 0 to 2 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits

Map Unit Composition

Stronghurst and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have stratified sandy material or loamy or clayey till at a depth of 40 to 60 inches

Dissimilar soils:

- The poorly drained Sable soils in the lower positions
- The well drained Fayette and Rozetta soils in the higher positions
- The well drained Greenbush soils on summits

Properties and Qualities of the Stronghurst Soil

Parent material: Loess

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.9 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Low

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Not hydric

Thorp Series

Drainage class: Poorly drained

Landform: Outwash plains, stream terraces, or till plains

Parent material: Loess over outwash

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls

Typical Pedon

Thorp silt loam, 0 to 2 percent slope; 990 feet north and 2,240 feet west of the southeast corner of sec. 27, T. 36 N., R. 5 E.; La Salle County, Illinois; USGS Sheridan topographic quadrangle; lat. 41 degrees 33 minutes 20 seconds N. and long. 88 degrees 38 minutes 10 seconds W., NAD 27:

- Ap—0 to 7 inches (0 to 18 cm); black (10YR 2/1) silt loam, dark gray (10YR 4/1) dry; moderate very fine granular structure; friable; common very fine roots throughout; neutral; abrupt smooth boundary.
- A—7 to 14 inches (18 to 36 cm); very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; moderate fine granular structure; friable; common very fine roots throughout; slightly acid; abrupt smooth boundary.
- Eg—14 to 19 inches (36 to 48 cm); dark gray (10YR 4/1) silt loam, gray (10YR 6/1) dry; weak fine granular structure; friable; common very fine roots throughout; few fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; moderately acid; clear smooth boundary.
- Btg1—19 to 21 inches (48 to 53 cm); mixed dark gray (10YR 4/1) and dark grayish brown (2.5Y 4/2) silty clay loam; weak fine prismatic structure parting to moderate fine subangular blocky; firm; common very fine roots between peds; many distinct very dark gray (10YR 3/1) clay films on faces of peds; few fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; moderately acid; clear smooth boundary.
- Btg2—21 to 33 inches (53 to 84 cm); mixed gray (5Y 5/1) and olive gray (5Y 4/2) silty clay loam; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; firm; many prominent very dark gray (10YR 3/1) clay films on faces of peds; many fine prominent yellowish brown (10YR 5/6) iron masses in the matrix; moderately acid; clear smooth boundary.
- Btg3—33 to 43 inches (84 to 109 cm); grayish brown (2.5Y 5/2) silty clay loam; weak fine prismatic structure parting to moderate fine angular and subangular blocky; firm; many distinct very dark gray (10YR 3/1) and dark gray (N 4/) clay films on faces of peds; common fine prominent yellowish brown (10YR 5/6) and common fine distinct light yellowish brown (2.5Y 6/4) iron masses in the matrix; slightly acid; clear smooth boundary.
- 2Btg4—43 to 50 inches (109 to 127 cm); mixed grayish brown (10YR 5/2) and yellowish brown (10YR 5/6) sandy clay loam; weak coarse subangular blocky structure; friable; few distinct dark grayish brown (2.5Y 4/2) clay films on faces of peds; neutral; clear smooth boundary.
- 2Cg—50 to 65 inches (127 to 165 cm); mixed grayish brown (10YR 5/2) and yellowish brown (10YR 5/8) sandy loam; massive; friable in the sandy loam portion; thin strata of sand; single grain; loose in the sand portion; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon: 10 to 14 inches (25 to 36 cm)

Thickness of the loess or other silty material: 35 to 54 inches (89 to 137 cm)

Depth to free carbonates: More than 40 inches (102 cm)

Thickness of the solum: 40 to 65 inches (102 to 165 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3
Texture—silt loam

Eg horizon:

Hue—10YR or 2.5Y
Value—4 to 6
Chroma—1 or 2
Texture—silt loam

Btg horizon:

Hue—10YR, 2.5Y, or 5Y
Value—4 to 6
Chroma—1 or 2
Texture—silty clay loam or silt loam

2Btg horizon:

Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 8
Texture—sandy clay loam, loam, clay loam, silt loam, or sandy loam; stratified in some pedons

2Cg horizon:

Hue—10YR, 2.5Y, 5Y, or N
Value—4 to 6
Chroma—0 to 8
Texture—stratified sandy loam, sandy clay loam, clay loam, loam, silt loam, silty clay loam, sand, or loamy sand

206A—Thorp silt loam, 0 to 2 percent slopes

Setting

Landform: Outwash plains, stream terraces, or till plains

Position on the landform: Depressions on summits

Map Unit Composition

Thorp and similar soils: 94 percent

Dissimilar soils: 6 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have a seasonal high water table at a depth of less than 12 inches

Dissimilar soils:

- The well drained Plano and Proctor soils on stream terraces and in the higher landscape positions
- The very poorly drained Booker soils on summits
- The poorly drained Harpster soils on summits

Properties and Qualities of the Thorp Soil

Parent material: Loess over outwash

Drainage class: Poorly drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 11.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 4.0 to 6.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: At the surface,
November through June

Depth and months of deepest ponding: 0.2 foot, January through May

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Negligible

Susceptibility to water erosion: Low

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2w

Prime farmland category: Prime farmland where drained

Hydric soil status: Hydric

Virgil Series

Drainage class: Somewhat poorly drained

Landform: Stream terraces, outwash plains, and till plains

Parent material: Loess over outwash and till

Slope range: 0 to 2 percent

Taxonomic classification: Fine-silty, mixed, mesic Udollic Endoaqualfs

Typical Pedon

Virgil silt loam, 0 to 2 percent slopes; 1,346 feet east and 300 feet south of the northwest corner of sec. 8, T. 26 N., R. 8 E.; Stephenson County, Illinois; USGS Freeport East topographic quadrangle; lat. 42 degrees 16 minutes 20 seconds N. and long. 89 degrees 36 minutes 23 seconds W., NAD 83:

- Ap—0 to 7 inches (0 to 18 cm); black (10YR 2/1) silt loam, grayish brown (10YR 5/2) dry; weak medium granular structure; friable; common fine roots; neutral; abrupt smooth boundary.
- E—7 to 13 inches (18 to 33 cm); dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) silt loam, light brownish gray (10YR 6/2) dry; weak thin platy structure parting to moderate fine granular; friable; many fine roots; few faint black (10YR 2/1) organic coatings on faces of peds and fillings in root channels; few fine distinct brown (7.5YR 4/4) masses of iron in the matrix; strongly acid; clear smooth boundary.
- Bt1—13 to 17 inches (33 to 43 cm); grayish brown (10YR 5/2) and brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; few faint dark grayish brown (10YR 4/2) clay films on faces of peds; common distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine distinct black (10YR 2/1) iron-manganese oxide concretions throughout; few fine distinct brown (7.5YR 4/4) and prominent strong brown (7.5YR 5/6) masses of iron in the matrix; strongly acid; clear smooth boundary.
- Bt2—17 to 25 inches (43 to 64 cm); grayish brown (10YR 5/2) and brown (10YR 5/3) silty clay loam; moderate fine subangular blocky structure; firm; common fine roots; common faint dark grayish brown (10YR 4/2) and grayish brown (10YR 5/2) clay films on faces of peds; common faint light gray (10YR 7/2) (dry) clay depletions on faces of peds; few fine distinct black (10YR 2/1) iron-manganese oxide concretions throughout; few fine distinct brown (7.5YR 4/4) and prominent

strong brown (7.5YR 5/6) masses of iron in the matrix; strongly acid; gradual smooth boundary.

Btg1—25 to 35 inches (64 to 89 cm); light brownish gray (2.5Y 6/2) silty clay loam; moderate fine and medium subangular blocky structure; firm; few fine roots; many faint grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many fine prominent black (10YR 2/1) iron-manganese oxide concretions throughout; common fine prominent strong brown (7.5YR 5/6 and 5/8) masses of iron in the matrix; strongly acid; clear smooth boundary.

Btg2—35 to 44 inches (89 to 112 cm); light brownish gray (2.5Y 6/2) silty clay loam; moderate medium and coarse subangular and angular blocky structure; firm; few fine roots; common faint grayish brown (2.5Y 5/2) clay films on faces of peds; few distinct light gray (10YR 7/2) (dry) clay depletions on faces of peds; many fine prominent black (10YR 2/1) iron-manganese oxide nodules and concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

Btg3—44 to 49 inches (112 to 124 cm); grayish brown (2.5Y 5/2) silty clay loam; weak medium and coarse angular blocky structure; firm; few fine roots; few prominent gray (N 5/) clay films on faces of peds; many fine prominent black (10YR 2/1) iron-manganese oxide nodules and concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron in the matrix; moderately acid; clear smooth boundary.

2Btg4—49 to 58 inches (124 to 147 cm); grayish brown (2.5Y 5/2) and light brownish gray (2.5Y 6/2) loam; weak coarse angular blocky structure; firm; few prominent dark gray (N 4/) clay films on faces of peds; few fine prominent black (10YR 2/1) iron-manganese oxide concretions throughout; many medium prominent brown (7.5YR 4/4) and strong brown (7.5YR 5/6) masses of iron in the matrix; neutral; gradual smooth boundary.

2C—58 to 60 inches (147 to 152 cm); brown (10YR 4/3) and dark yellowish brown (10YR 4/4) sandy loam; massive; friable; common fine distinct dark gray (10YR 4/1) and gray (10YR 5/1) iron depletions in the matrix; moderately alkaline.

Range in Characteristics

Thickness of the loess: 40 to 60 inches (102 to 152 cm)

Depth to free carbonates: 45 to 70 inches (114 to 178 cm)

Thickness of the solum: 42 to 70 inches (107 to 178 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam

E horizon:

Hue—10YR

Value—4 to 6

Chroma—1 or 2

Texture—silt loam

Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 4

Texture—silty clay loam

2Bt horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—loam, clay loam, sandy loam, or silt loam

2C horizon:

Hue—10YR or 2.5Y

Value—4 to 6

Chroma—2 to 6

Texture—loam, sandy loam, silt loam, or clay loam

104A—Virgil silt loam, 0 to 2 percent slopes***Setting****Landform:* Stream terraces, outwash plains, or till plains*Position on the landform:* Summits***Map Unit Composition***

Virgil and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent*Similar soils:*

- Soils that have a thick, darker surface layer
- Soils that have outwash at a depth of less than 40 inches

Dissimilar soils:

- The well drained Batavia soils in drainageways
- The poorly drained Thorp soils in low areas

Properties and Qualities of the Virgil Soil*Parent material:* Loess over outwash and till*Drainage class:* Somewhat poorly drained*Slowest permeability within a depth of 40 inches:* Moderate*Permeability below a depth of 60 inches:* Moderate or moderately rapid*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 13.1 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 4.0 percent*Shrink-swell potential:* Moderate*Depth and months of the highest apparent seasonal high water table:* 0.5 foot, January through May*Ponding:* None*Flooding:* None*Potential for frost action:* High*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 1*Prime farmland category:* Prime farmland where drained*Hydric soil status:* Not hydric

104B—Virgil silt loam, 2 to 5 percent slopes

Setting

Landform: Stream terraces, outwash plains, or till plains

Position on the landform: Summits and shoulders

Map Unit Composition

Virgil and similar soils: 95 percent

Dissimilar soils: 5 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have outwash at a depth of less than 40 inches

Dissimilar soils:

- The well drained Batavia soils in drainageways

Properties and Qualities of the Virgil Soil

Parent material: Loess over outwash and till

Drainage class: Somewhat poorly drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate or moderately rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 13.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 2.0 to 4.0 percent

Shrink-swell potential: Moderate

Depth and months of the highest apparent seasonal high water table: 0.5 foot, January through May

Ponding: None

Flooding: None

Potential for frost action: High

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

Warsaw Series

Drainage class: Well drained

Landform: Outwash plains

Parent material: Outwash

Slope range: 5 to 10 percent

Taxonomic classification: Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Argiudolls

Taxadjunct features: The Warsaw soils in this survey area have a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soils. These soils are classified as fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Mollic Hapludalfs.

Typical Pedon

Warsaw loam, 2 to 5 percent slopes; at an elevation of 657 feet (200 meters); 1,260 feet north and 102 feet west of the center of sec. 12, T. 18 N., R. 7 E.; Bureau County, Illinois; USGS New Bedford topographic quadrangle; lat. 41 degrees 33 minutes 55 seconds N. and long. 88 degrees 38 minutes 18 seconds W., NAD 27:

- Ap—0 to 8 inches (0 to 20 cm); black (10YR 2/1) loam, brown (10YR 4/3) dry; moderate fine granular structure; friable; common fine roots; moderately acid; abrupt smooth boundary.
- A—8 to 13 inches (20 to 33 cm); very dark grayish brown (10YR 3/2) loam, brown (10YR 4/3) dry; moderate fine granular structure; friable; few fine roots; many prominent very dark brown (10YR 2/2) organic coatings on faces of peds; moderately acid; clear smooth boundary.
- Bt1—13 to 17 inches (33 to 43 cm); dark yellowish brown (10YR 4/4) loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; many prominent very dark grayish brown (10YR 3/2) clay films on faces of peds; moderately acid; clear smooth boundary.
- Bt2—17 to 22 inches (43 to 56 cm); dark yellowish brown (10YR 4/4) loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; many prominent dark brown (10YR 3/3) clay films on faces of peds; slightly acid; clear smooth boundary.
- Bt3—22 to 27 inches (56 to 69 cm); brown (7.5YR 4/4) loam; weak medium prismatic structure parting to moderate fine subangular blocky; friable; few fine roots; common prominent dark brown (10YR 3/3) clay films on faces of peds; 2 percent pebbles; slightly acid; clear smooth boundary.
- 2Bt4—27 to 31 inches (69 to 79 cm); brown (7.5YR 4/4) gravelly sandy clay loam; weak medium subangular blocky structure parting to moderate fine granular; very friable; few fine roots; common faint brown (7.5YR 4/4) clay films on faces of peds; 15 percent gravel; neutral; abrupt smooth boundary.
- 2C—31 to 60 inches (79 to 152 cm); yellowish brown (10YR 5/4) very gravelly coarse sand; single grain; loose; 50 percent gravel; violently effervescent; moderately alkaline.

Range in Characteristics

Thickness of the dark surface layer: 7 to 14 inches (18 to 36 cm)

Depth to sandy and gravelly deposits: 24 to 40 inches (61 to 102 cm)

Depth to carbonates: More than 20 inches (51 cm)

Thickness of the solum: 24 to 40 inches (61 to 102 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 or 2

Texture—silt loam or loam

Content of rock fragments—less than 15 percent

Bt horizon:

Hue—7.5YR or 10YR

Value—3 or 4

Chroma—2 to 4

Texture—clay loam, loam, sandy clay loam, or silty clay loam

Content of rock fragments—less than 15 percent

2Bt horizon:

Hue—7.5YR or 10YR

Value—2 to 4

Chroma—2 to 4

Texture—gravelly sandy clay loam or gravelly clay loam

Content of rock fragments—15 to 25 percent

2C horizon:

Hue—7.5YR or 10YR

Value—5 or 6

Chroma—2 to 4

Texture—the gravelly, very gravelly, or extremely gravelly analogs of sand, loamy sand, coarse sand, or loamy coarse sand

Content of rock fragments—15 to 75 percent

290C2—Warsaw silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Outwash plains

Position on the landform: Backslopes

Map Unit Composition

Warsaw and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a lighter colored surface layer
- Soils that have 40 to 60 inches of loamy material over the underlying sand and gravel

Dissimilar soils:

- The somewhat poorly drained Elburn and poorly drained Drummer soils in depressions and drainageways

Properties and Qualities of the Warsaw Soil

Parent material: Outwash

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very rapid

Depth to restrictive feature: More than 80 inches

Available water capacity: About 5.6 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Low for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

W—Water

- This map unit consists of natural bodies of water, such as ponds, lakes, and rivers.

Westville Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Paleosol that formed in till

Slope range: 5 to 18 percent

Taxonomic classification: Fine-loamy, mixed, superactive, mesic Typic Hapludalfs

Typical Pedon

Westville silt loam, 2 to 5 percent slopes; 2,040 feet south and 166 feet east of the northwest corner of sec. 4, T. 26 N., R. 10 E.; Winnebago County, Illinois; USGS Pecatonica topographic quadrangle; lat. 42 degrees 17 minutes 01 second N. and long. 89 degrees 21 minutes 30 seconds W., NAD 27; UTM Zone 16, Easting 0305556, Northing 4683975, NAD 83:

Ap—0 to 8 inches (0 to 20 cm); dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; few pebbles 5 mm in diameter; slightly acid; abrupt smooth boundary.

Bt1—8 to 15 inches (20 to 38 cm); brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable; few distinct dark reddish brown (5YR 3/3) clay films on faces of peds; few very dark grayish brown (10YR 3/2) krotovinas; common pebbles 1 cm in diameter; neutral; clear smooth boundary.

Bt2—15 to 21 inches (38 to 53 cm); reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few distinct reddish brown (5YR 4/4) clay films on faces of peds; few black (N 2.5/) iron-manganese oxide stains on faces of peds; common pebbles 1 to 3 cm in diameter; neutral; clear smooth boundary.

Bt3—21 to 38 inches (53 to 97 cm); yellowish red (5YR 4/6) clay loam; strong medium angular and subangular blocky structure; firm; many distinct reddish brown (5YR 4/3) clay films on faces of peds; many black (N 2.5/) iron-manganese oxide stains on faces of peds; common pebbles 1 to 3 cm diameter; neutral; clear smooth boundary.

Bt4—38 to 44 inches (97 to 112 cm); reddish brown (5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few distinct reddish brown (5YR 4/3) clay films on faces of peds; common black (N 2.5/) iron-manganese oxide stains on faces of peds; common pebbles less than 1 cm in diameter and few pebbles 3 cm in diameter; strongly acid; clear smooth boundary.

Bt5—44 to 50 inches (112 to 127 cm); brown (7.5YR 4/4) clay loam; moderate medium prismatic structure parting to moderate medium and coarse subangular blocky; friable; few distinct reddish brown (5YR 4/3) and yellowish red (5YR 4/6) clay films on faces of peds; common pebbles 1 to 2 cm in diameter; strongly acid; clear smooth boundary.

BC1—50 to 61 inches (127 to 155 cm); light yellowish brown (10YR 6/4) and brown (7.5YR 4/4) sandy clay loam; weak and moderate medium and coarse prismatic structure parting to moderate medium subangular blocky; friable; few pebbles 1 to 3 cm in diameter; moderately acid; clear smooth boundary.

BC2—61 to 67 inches (155 to 170 cm); light yellowish brown (10YR 6/4) and dark yellowish brown (10YR 4/4) sandy loam; weak medium subangular blocky structure; friable; few pebbles 2 to 5 cm in diameter; slightly acid; clear smooth boundary.

C—67 to 72 inches (170 to 183 cm); light yellowish brown (10YR 6/4) sandy loam; massive; friable; few pebbles ranging from less than 1 cm to 5 cm in diameter; slightly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the loess: Less than 15 inches (38 cm)

Thickness of the solum: 35 to more than 60 inches (89 to more than 152 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 4

Chroma—2 or 3

Texture—loam, silt loam, or clay loam

E horizon (where present):

Hue—10YR

Value—4 to 6

Chroma—2 to 4

Texture—loam or silt loam

Bt and BC horizons:

Hue—5YR, 7.5YR, or 10YR

Value—3 to 6

Chroma—3 to 6

Texture—clay loam or sandy clay loam

C horizon:

Hue—7.5YR or 10YR

Value—4 to 6

Chroma—3 to 6

Texture—sandy loam, loam, gravelly sandy loam, or gravelly loam

22C2—Westville silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Westville and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a thick, darker surface layer
- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils that have more silt and less sand in the upper part of the solum

Dissimilar soils:

- Moderately deep soils on side slopes

Properties and Qualities of the Westville Soil

Parent material: Paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches
Available water capacity: About 10.4 inches to a depth of 60 inches
Content of organic matter in the surface layer: 1.0 to 3.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer has been thinned by erosion.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e
Prime farmland category: Not prime farmland
Hydric soil status: Not hydric

22C3—Westville clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines
Position on the landform: Backslopes and shoulders

Map Unit Composition

Westville and similar soils: 88 percent
 Dissimilar soils: 12 percent

Components of Minor Extent

Similar soils:

- Soils that have a seasonal high water table at a depth of 2 to 6 feet

Dissimilar soils:

- Moderately deep soils on side slopes

Properties and Qualities of the Westville Soil

Parent material: Paleosol that formed in till
Drainage class: Well drained
Slowest permeability within a depth of 40 inches: Moderate
Permeability below a depth of 60 inches: Moderate
Depth to restrictive feature: More than 80 inches
Available water capacity: About 8.9 inches to a depth of 60 inches
Content of organic matter in the surface layer: 0.5 to 1.0 percent
Shrink-swell potential: Moderate
Ponding: None
Flooding: None
Accelerated erosion: The surface layer is mostly subsoil material.
Potential for frost action: Moderate
Hazard of corrosion: Moderate for steel and concrete
Surface runoff class: Medium
Susceptibility to water erosion: Moderate
Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

22D2—Westville silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes and shoulders

Map Unit Composition

Westville and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a darker surface layer
- Soils that have a seasonal high water table at a depth of 4 to 6 feet

Dissimilar soils:

- Moderately deep soils on side slopes

Properties and Qualities of the Westville Soil

Parent material: Paleosol that formed in till

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Moderate

Depth to restrictive feature: More than 80 inches

Available water capacity: About 10.4 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: Moderate for steel and concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Woodbine Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess over till over residuum derived from limestone

Slope range: 2 to 18 percent

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Hapludalfs

Typical Pedon

Woodbine silt loam, 2 to 5 percent slopes; 150 feet west and 400 feet south of the northeast corner of sec. 11, T. 27 N., R. 7 E.; Stephenson County, Illinois; USGS Freeport West topographic quadrangle; lat. 42 degrees 21 minutes 30 seconds N. and long. 89 degrees 39 minutes 45 seconds W., NAD 27:

- A—0 to 4 inches (0 to 10 cm); very dark brown (10YR 2/2) silt loam, dark grayish brown (10YR 4/2) dry; moderate fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.
- E—4 to 11 inches (10 to 28 cm); dark grayish brown (10YR 4/2) silt loam; weak thin platy structure parting to moderate fine granular; friable; common fine roots; many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; moderately acid; clear smooth boundary.
- BE—11 to 19 inches (28 to 48 cm); brown (10YR 4/3) silt loam; weak medium platy structure parting to moderate fine subangular blocky; friable; few fine roots; many distinct light gray (10YR 7/2) (dry) silt coatings on faces of peds; moderately acid; abrupt smooth boundary.
- 2Bt1—19 to 27 inches (48 to 69 cm); brown (7.5YR 4/4) silty clay loam containing about 15 percent sand; moderate fine subangular blocky structure; firm; few fine roots; few distinct light gray (10YR 7/2) (dry) silt coatings and dark brown (7.5YR 3/3) clay films on faces of peds; moderately acid; gradual smooth boundary.
- 2Bt2—27 to 39 inches (69 to 99 cm); brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; common distinct dark brown (7.5YR 3/3) clay films on faces of peds; moderately acid; abrupt smooth boundary.
- 2Bt3—39 to 43 inches (99 to 109 cm); reddish brown (5YR 4/4) sandy clay loam; moderate medium and coarse subangular blocky structure; firm; few distinct dark reddish brown (5YR 3/3) clay films on faces of peds; moderately acid; abrupt smooth boundary.
- 3Bt4—43 to 46 inches (109 to 117 cm); dark reddish brown (5YR 3/4) silty clay; moderate fine angular blocky structure; very firm; few distinct black (5YR 2.5/1) organic stains and few faint dark reddish brown (5YR 3/2) clay films on faces of peds; slightly acid; abrupt smooth boundary.
- 3R—46 inches (117 cm); brownish yellow (10YR 6/6 and 6/8) level-bedded dolomitic limestone.

Range in Characteristics

Thickness of the loess: 10 to 30 inches (25 to 76 cm)

Thickness of the drift: 20 to 35 inches (51 to 89 cm)

Thickness of the residuum: 0 to 5 inches (0 to 13 cm)

Thickness of the solum: 40 to 60 inches (102 to 152 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 5

Chroma—1 to 3

Texture—silt loam or silty clay loam

E horizon (where present):

Hue—10YR

Value—4 or 5

Chroma—1 to 3

Texture—silt loam or loam

2Bt horizon:

Hue—2.5YR, 5YR, or 7.5YR

Value—3 to 5

Chroma—3 to 5

Texture—clay loam, silty clay loam, loam, sandy clay loam, or sandy loam

3Bt horizon:

Hue—5YR

Value—3 or 4

Chroma—3 to 6

Texture—silty clay or clay or the cherty or gravelly analogs of these textures

410B—Woodbine silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Summits and shoulders

Map Unit Composition

Woodbine and similar soils: 97 percent

Dissimilar soils: 3 percent

Components of Minor Extent

Similar soils:

- Soils that have a surface layer of silty clay loam or clay loam
- Soils that have more sand and gravel above the bedrock
- Soils that formed in lacustrine materials over bedrock

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Woodbine Soil

Parent material: Loess over till over residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 7.1 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 2.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Potential for frost action: Moderate

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Low

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 2e

Prime farmland category: Prime farmland

Hydric soil status: Not hydric

410C2—Woodbine silt loam, 5 to 10 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Woodbine and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a surface layer of silty clay loam or clay loam
- Soils that have more sand and gravel above the bedrock
- Soils that formed in lacustrine materials over bedrock

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Woodbine Soil

Parent material: Loess over till over residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 8.2 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 1.5 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

410C3—Woodbine silty clay loam, 5 to 10 percent slopes, severely eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Woodbine and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent

Similar soils:

- Soils that have a surface layer of silty clay loam or clay loam
- Soils that have more sand and gravel above the bedrock
- Soils that formed in lacustrine materials over bedrock

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches

Properties and Qualities of the Woodbine Soil

Parent material: Loess over till over residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Slow

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 6.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.2 to 1.0 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer is mostly subsoil material.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: High

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 4e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

410D2—Woodbine silt loam, 10 to 18 percent slopes, eroded

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Woodbine and similar soils: 85 percent

Dissimilar soils: 15 percent

Components of Minor Extent

Similar soils:

- Soils that have a surface layer of silty clay loam or clay loam
- Soils that have more sand and gravel above the bedrock
- Soils that formed in lacustrine materials over bedrock

Dissimilar soils:

- Dubuque soils, which have limestone bedrock at a depth of 20 to 40 inches
- The well drained Pecatonica soils on backslopes

Properties and Qualities of the Woodbine Soil

Parent material: Loess over till over residuum derived from limestone

Drainage class: Well drained

Slowest permeability within a depth of 40 inches: Moderate

Permeability below a depth of 60 inches: Very slow or slow

Depth to restrictive feature: 40 to 60 inches to lithic bedrock

Available water capacity: About 8.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 0.5 to 1.5 percent

Shrink-swell potential: High

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and low for concrete

Surface runoff class: Medium

Susceptibility to water erosion: High

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Wyanet Series

Drainage class: Well drained

Landform: Ground moraines

Parent material: Loess over till

Slope range: 2 to 10 percent

Taxonomic classification: Fine-loamy, mixed, active, mesic Typic Argiudolls

Taxadjunct features: The Wyanet soil in map unit 622C2 has a thinner dark surface layer than is defined as the range for the series. This difference, however, does not significantly affect the use and management of the soil. This soil is classified as a fine-loamy, mixed, active, mesic Mollic Hapludalf.

Typical Pedon

Wyanet silt loam, 2 to 5 percent slopes; at an elevation of 743 feet (226 meters); 1,300 feet east and 225 feet south of the northwest corner of sec. 31, T. 22 N., R. 14 W.; Champaign County, Illinois; USGS Penfield topographic quadrangle; lat. 40 degrees 19 minutes 37 seconds N. and long. 87 degrees 59 minutes 01 second W., NAD 27:

Ap—0 to 10 inches (0 to 25 cm); very dark grayish brown (10YR 3/2) silt loam, grayish brown (10YR 5/2) dry; weak fine granular structure; friable; common very fine and fine roots; 1 percent fine gravel; neutral; abrupt smooth boundary.

Bt1—10 to 14 inches (25 to 36 cm); brown (10YR 4/3) clay loam; moderate fine subangular blocky structure; firm; common fine roots; few fine pores; common faint very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; 3 percent fine gravel; slightly acid; clear smooth boundary.

Bt2—14 to 27 inches (36 to 69 cm); light olive brown (2.5Y 5/4) clay loam; moderate medium subangular blocky structure; firm; few fine roots; common fine pores; common prominent very dark grayish brown (10YR 3/2) organo-clay films on faces of peds; few prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 7 percent fine and medium gravel; slightly acid; clear smooth boundary.

BC—27 to 31 inches (69 to 79 cm); light olive brown (2.5Y 5/4) loam; weak medium subangular blocky structure; firm; 7 percent fine and medium gravel; slightly effervescent; slightly alkaline; gradual smooth boundary.

C—31 to 80 inches (79 to 203 cm); light olive brown (2.5Y 5/4) loam; massive; very firm; common prominent irregular light gray (10YR 7/1) very weakly cemented calcium carbonate nodules in pores; few fine and medium rounded red (2.5YR 4/8) weakly cemented iron oxide nodules throughout; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 7 percent fine and medium gravel; strongly effervescent; moderately alkaline.

Range in Characteristics

Thickness of the mollic epipedon or dark surface layer: 7 to 15 inches (18 to 38 cm)

Thickness of the loess: Less than 18 inches (46 cm)

Depth to the base of the argillic horizon: 24 to 40 inches (61 to 102 cm)

Depth to carbonates: 20 to 40 inches (51 to 102 cm)

Ap or A horizon:

Hue—10YR

Value—2 to 3

Chroma—1 to 3

Texture—silt loam

Bt or 2Bt horizon:

Hue—2.5Y, 10YR, or 7.5YR

Value—4 or 5

Chroma—4 to 6

Texture—loam, clay loam, or silty clay loam

Content of rock fragments—0 to 10 percent

BC, 2BC, C, or 2C horizon:

Hue—2.5Y, 10YR, or 7.5YR

Value—4 to 7

Chroma—3 or 4

Texture—loam or sandy loam

Content of rock fragments—0 to 10 percent

622B—Wyanet silt loam, 2 to 5 percent slopes

Setting

Landform: Ground moraines

Position on the landform: Backslopes

Map Unit Composition

Wyanet and similar soils: 85 percent

Dissimilar soils: 15 percent

Components of Minor Extent

Similar soils:

- Soils in which the solum is more than 40 inches thick over the underlying calcareous material
- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils that have sandy loam, clay loam, silty clay loam, or stratified sandy loam, loamy sand, and sand in the substratum

Dissimilar soils:

- The poorly drained Sable and Drummer soils in the slightly lower landscape positions
- Poorly drained soils on toeslopes

Properties and Qualities of the Wyanet Soil*Parent material:* Loess over till*Drainage class:* Well drained*Slowest permeability within a depth of 40 inches:* Moderately slow*Permeability below a depth of 60 inches:* Moderately slow*Depth to restrictive feature:* More than 80 inches*Available water capacity:* About 9.7 inches to a depth of 60 inches*Content of organic matter in the surface layer:* 2.0 to 4.0 percent*Shrink-swell potential:* Moderate*Ponding:* None*Flooding:* None*Potential for frost action:* Moderate*Hazard of corrosion:* High for steel and moderate for concrete*Surface runoff class:* Low*Susceptibility to water erosion:* Low*Susceptibility to wind erosion:* Low***Interpretive Groups****Land capability classification:* 2e*Prime farmland category:* Prime farmland*Hydric soil status:* Not hydric**622C2—Wyanet silt loam, 5 to 10 percent slopes, eroded*****Setting****Landform:* Ground moraines*Position on the landform:* Backslopes***Map Unit Composition***

Wyanet and similar soils: 90 percent

Dissimilar soils: 10 percent

Components of Minor Extent*Similar soils:*

- Soils in which the solum is more than 40 inches thick over the underlying calcareous material
- Soils that have a seasonal high water table at a depth of 4 to 6 feet
- Soils that have sandy loam, clay loam, silty clay loam, or stratified sandy loam, loamy sand, and sand in the substratum
- Severely eroded soils that have a surface layer of clay loam

Dissimilar soils:

- The poorly drained Sable and Drummer soils in the slightly lower landscape positions
- Poorly drained soils on toeslopes

Properties and Qualities of the Wyanet Soil*Parent material:* Loess over till*Drainage class:* Well drained

Slowest permeability within a depth of 40 inches: Moderately slow

Permeability below a depth of 60 inches: Moderately slow

Depth to restrictive feature: More than 80 inches

Available water capacity: About 9.0 inches to a depth of 60 inches

Content of organic matter in the surface layer: 1.0 to 3.0 percent

Shrink-swell potential: Moderate

Ponding: None

Flooding: None

Accelerated erosion: The surface layer has been thinned by erosion.

Potential for frost action: Moderate

Hazard of corrosion: High for steel and moderate for concrete

Surface runoff class: Medium

Susceptibility to water erosion: Moderate

Susceptibility to wind erosion: Low

Interpretive Groups

Land capability classification: 3e

Prime farmland category: Not prime farmland

Hydric soil status: Not hydric

Use and Management of the Soils

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as forestland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of gravel, sand, reclamation material, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes are *not limited*, *somewhat limited*, and *very limited* or *slight*, *moderate*, and *severe*. The suitability ratings are expressed as *well suited*, *moderately suited*, *poorly suited*, and *unsuited* or as *good*, *fair*, and *poor*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading "Soil Series and Detailed Soil Map Units." Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

In 2005, Stephenson County had about 239,500 acres of cropland (U.S. Department of Commerce, 2005). The major row crops are corn and soybeans. Wheat is the major small grain crop, and alfalfa is the major forage crop.

Some of the management concerns affecting cropland and pasture in Stephenson County are water erosion, crusting, poor tilth, high pH, excessive permeability, wetness, and ponding.

Erosion is a potential problem on soils that have slopes of more than 2 percent, such as Flagg, Osco, and Pecatonica soils. It also is a hazard in areas that have slopes of less than 2 percent if the slopes are long or if the soils are subject to concentrated flow.

Loss of the surface layer through sheet and rill erosion is damaging for several reasons. Soil productivity is reduced as the surface soil is removed and part of the subsoil is incorporated into the plow layer. The subsoil is generally lower in plant nutrients, lower in organic matter, and higher in clay content than the surface soil. As the content of organic matter decreases in the plow layer and the clay content increases, soil tilth deteriorates. As a result, surface crusting can occur and the rate of water infiltration is reduced. Under these conditions, preparing a good seedbed could be difficult. Erosion results in the sedimentation of streams, rivers, road ditches, and lakes. This sedimentation reduces the quality of water for agricultural, municipal, and recreational uses and for fish and wildlife. Removing the sediment generally is expensive. Erosion control helps to minimize this pollution and improves water quality.

Erosion-control measures include both cultural and structural practices. The most widely used practice in the county is a system of conservation tillage, such as chisel plowing, no-till farming, or ridge planting. These systems can leave 20 to 90 percent of the surface covered with crop residue. No-till farming is most effective in areas of moderately well drained and well drained soils, such as Plano and St. Charles soils. Another cultural practice is a crop rotation that includes 1 or more years of close-growing grasses or legumes. If slopes are smooth and uniform, terraces and contour farming also are effective in controlling erosion.

Structural practices are needed in drainageways where concentrated runoff flows overland. Establishing grassed waterways or erosion-control structures can reduce the hazard of erosion in these areas.

Further information about erosion-control measures suitable for each kind of soil is provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service.

Surface crusting can be a problem in areas of Kendall and Kidder soils, which have a surface layer of silt loam or loam and a low content of organic matter. Generally, the structure of these soils is weak, and a crust forms on the surface during periods of intense rainfall. This crust is hard when dry. It inhibits seedling emergence, reduces the infiltration rate, and increases runoff and erosion. Regular additions of crop residue, manure, and other organic material improve soil structure and minimize crusting.

Soil tilth is an important factor influencing the germination of seeds, the amount of runoff, and the rate of water infiltration. Soils that have good tilth are granular and porous and have a high content of organic matter. Poor tilth is a problem on soils that have a surface layer of silty clay loam. Drummer and Sable soils are examples. If these soils are plowed when wet, the surface layer can become cloddy. This cloddiness hinders the preparation of a good seedbed. Tilling in the fall and leaving the soil surface rough with moderate amounts of crop residue generally result in good tilth in the spring. A system of strip or ridge tillage may also work well in areas of these soils.

High pH within a depth of 40 inches can occur in some soils in the survey area. It can reduce the uptake of some nutrients by the plants or cause other elements to accumulate to toxic levels. This limitation can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems.

In areas where the soils have excessive permeability, such as areas of Dickinson and Warsaw soils, the potential for ground-water contamination is a concern. These soils contain sandy and/or gravelly deposits within a depth of 60 inches and are rapidly or very rapidly permeable in the lower part of the profile. Several measures can be used to limit the amount of deep leaching of nutrients and pesticides that can occur in these areas. Applications of fertilizer should be based on the results of soil tests. The local office of the Cooperative Extension Service can help in determining the kinds and proper amounts of nutrients needed. Chemicals should be selected based on their solubility in water, their ability to bind with the soil, and the rate of their breakdown in the soil. Splitting chemical applications, particularly applications of nitrogen, is beneficial. This practice reduces the chance for excessive leaching from a one-time application. Also, planting legumes in a crop rotation or as a cover crop adds nitrogen to the soil, thereby reducing the amount of nitrogen needed in chemical applications. The practice of crop rotation is also effective in limiting the buildup of weed and insect populations and therefore reduces the amount of herbicides and insecticides needed per application. Finally, the use of small grain cover crops following fertilized corn crops can be effective in taking up some residual nitrogen from the soil.

Wetness is a concern in some parts of the survey area. Drainage systems have been installed in most areas of poorly drained and somewhat poorly drained soils used as cropland in the county; therefore, these soils are adequately drained for the commonly grown crops. Measures that maintain the drainage system are needed. Poorly drained soils have subsurface drainage. Also, in some areas of poorly drained or very poorly drained soils, such as Drummer soils, ponding is a hazard. Surface tile inlets or shallow ditches are needed to remove excess water. In some areas, somewhat poorly drained soils are wet long enough that in some years productivity is reduced, unless they are artificially drained. Somewhat poorly drained soils, such as Elburn and Stronghurst soils, have subsurface drainage.

Proper management is needed on hayland to prolong the life of desirable forage species, maintain or improve the quality and quantity of forage, and control erosion and reduce the runoff rate. Hay may last as a vigorous crop for 4 to 5 years,

depending on management and on the varieties seeded. Suitable hay plants include several legumes and cool-season grasses. Alfalfa is the legume most commonly grown for hay. It is often used in mixtures with smooth brome grass and orchardgrass. Alfalfa is best suited to moderately well drained and well drained soils, such as Plano soils. Red clover also is grown for hay. Measures that maintain or improve fertility are needed. The amount of lime and fertilizer to be added should be based on the results of soil tests, the needs of the plants, and the expected level of yields. Seed varieties should be selected in accordance with the soil properties and the drainage conditions of the specific tract of land.

Overgrazing reduces the vigor of pasture plants and reduces forage production. It also results in an increase in the extent of weeds and brush. Deferred grazing, rotation grazing, and proper stocking rates help to prevent overgrazing. Deferred grazing allows the plants in pastures that are not being used to build up reserves of carbohydrates. Rotating grazing among several pastures allows each area a rest period.

Many of the soils in the survey area have a high water table in the spring. Deferred grazing during wet periods can minimize the surface compaction that can occur in areas of these soils. Pasture renovation also helps to prevent compaction. Frost heave can damage alfalfa and red clover in areas that have a seasonal high water table. Leaving a cover of stubble 4 to 6 inches high during the winter and using mixtures of grasses and legumes help to prevent frost heave.

Limitations and Hazards Affecting Cropland and Pastureland

The management concerns affecting the use of the detailed soil map units in the survey area for crops and pasture are shown in table 6.

Cropland

The main concerns affecting the management of cropland in Stephenson County are controlling water erosion, soil wetness, and ponding; minimizing surface crusting; improving tilth; and limiting the effects of high pH and excessive permeability. Depth to bedrock, restricted permeability, limited available water capacity, wind erosion, flooding, excess lime, subsidence, and root-restrictive layers are additional concerns.

Generally, a combination of several practices is needed to control water erosion. Conservation tillage, strip cropping (fig. 9), contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to minimize excessive soil loss.

In some areas used as cropland, wetness and ponding are management concerns. Drainage systems consist of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these. Measures that maintain the drainage system are needed.

Practices that minimize surface crusting and improve soil tilth include incorporating green manure crops, manure, or crop residue into the soil and using a system of conservation tillage. Surface cloddiness can be controlled by avoiding tillage when the soil is too wet.

High pH and excess lime can be partially overcome by incorporating green manure crops, manure, or crop residue into the soil and by applying conservation tillage and conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer on soils that have a high content of lime.

Excessive permeability can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split application methods reduce the hazard of ground-water contamination.

A root-restrictive layer in a soil and bedrock within a depth of 40 inches can limit the total amount of moisture available to plants. These limitations cannot be easily



Figure 9.—Stripcropping can reduce the hazard of erosion in some areas.

overcome. Planting cover crops and using a system of conservation tillage that leaves crop residue on the surface after planting increase the rate of water infiltration, reduce the runoff rate, and conserve moisture. Also, planting drought-tolerant crop species helps to make the most efficient use of the limited supply of moisture in the soil.

Restricted permeability can increase the susceptibility of the soil to erosion and limit the effectiveness of drainage systems. The hazard of erosion can be reduced by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Spacing the tile at narrow intervals improves the ability of the drainage system to lower the seasonal high water table.

Conserving moisture is important in areas where the soils have a limited available water capacity. It primarily involves reducing the evaporation and runoff rates and increasing the rate of water infiltration. Applying conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

Wind erosion can be controlled by using a system of conservation tillage that leaves crop residue on the surface after planting and by keeping the surface rough.

Flooding cannot be easily overcome. Winter small grain crops can be damaged by floodwater. Tilling and planting should be delayed in the spring until flooding is no longer a hazard.

Subsidence occurs as a result of shrinkage from drying, consolidation caused by the loss of ground water, compaction from tillage, wind erosion, burning, and biochemical oxidation. Limiting the amount of drainage, avoiding excessive tillage, avoiding tilling when the soil is wet, and using a system of conservation tillage that leaves crop residue on the surface after planting help to control subsidence.

The criteria used to determine some of the limitations or hazards in the table are described in the following paragraphs.

Crusting.—The average content of organic matter in the surface layer is 2.5 percent or less, and the content of clay in the surface layer is between 20 and 35 percent.

Depth to bedrock.—Bedrock is within a depth of 40 inches.

Excess lime.—The calcium carbonate equivalent is 15 percent or more in all layers within a depth of 20 inches.

Excessive permeability.—The lower limit of the permeability range within the soil profile is 6 inches or more.

Flooding.—The soil is occasionally flooded or frequently flooded.

High pH.—The pH is 7.4 or more within a depth of 40 inches.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less.

Ponding.—The water table is above the surface.

Poor tilth.—The soil is somewhat poorly drained, poorly drained, or severely eroded, and the lower limit of the clay content in the surface layer is 27 percent or more.

Restricted permeability.—Permeability is less than 0.2 inch per hour between the surface and a depth of 40 inches.

Root-restrictive layer.—Dense material is within a depth of 40 inches.

Water erosion.—The Kw factor of the surface layer multiplied by the upper limit of the slope is 0.8 or more, and the slope is 3 percent or more.

Wetness.—The seasonal high water table is within a depth of 1.5 feet.

Wind erosion.—The wind erodibility group (WEG) is 1 or 2.

Pastureland

The major management concerns affecting pastureland are water erosion, low pH, high pH, excessive permeability, wetness, ponding, limited available water capacity, frost heave, depth to bedrock, wind erosion, flooding, poor tilth, excess lime, equipment limitations, low fertility, and root-restrictive layers.

Water erosion is a hazard in pastured areas where the value of the Kw factor multiplied by the upper limit of the slope is 0.8 or more and the slope is 3 percent or more. Water erosion reduces the productivity of pasture. It also results in onsite and offsite sedimentation, causes water pollution by sedimentation, and increases the runoff of livestock manure and other nutrients. Establishing or renovating stands of legumes and grasses helps to control erosion. Controlling erosion during seedbed preparation is a major concern. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, establishing grassed waterways, farming on the contour, and applying a system of conservation tillage that leaves crop residue on the surface can help to minimize erosion.

Soils that have low pH, or low reaction, have a pH value of 5.5 or less within a depth of 40 inches. Low pH inhibits the uptake of certain nutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of the plants. Applications of lime should be based on the results of soil tests. The goal is to achieve the optimum pH level for the uptake of the major nutrients by the specific grass, legume, or combination of grasses and legumes.

In soils that have high pH, the lower limit of the pH range is 7.4 or more within a depth of 40 inches. Excess lime occurs in soils that have a calcium carbonate equivalent of 15 percent or more within a depth of 16 inches. The high soil reaction associated with these limitations can inhibit the uptake of certain nutrients and micronutrients by the plants or accelerates the absorption of certain other elements to the level of toxic concentrations. Either of these conditions affects the health and vigor of the plants. Applications of sulfate and phosphate compounds or additions of certain forms of nitrogen fertilizer can improve forage production.

Excessive permeability is a concern in areas where the lower limit of the permeability range is 6 or more inches per hour within the soil profile. Excessive

permeability can cause deep leaching of nutrients and pesticides. Selecting appropriate chemicals and using split application methods can reduce the hazard of ground-water contamination when stands of legumes and grasses are established or renovated.

Wetness and ponding are management concerns in some areas of pasture or hayland. Wetness occurs when the seasonal high water table is within a depth of 1.5 feet, and ponding occurs when the water table is above the surface. Drainage systems consisting of subsurface tile drains, surface inlet tile, open drainage ditches, or a combination of these can lower the water table and help to remove excess water. Measures that maintain the drainage system are needed. Selecting species of grasses and legumes adapted to wet conditions improves forage production. Restricted use during wet periods helps to keep the pasture in good condition.

Limited available water capacity occurs in areas where the available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less. Available water capacity refers to the capacity of soils to hold water available for use by most plants. The quality and quantity of the pasture plants may be reduced if the amount of available water is inadequate for maintenance of a healthy community of desired pasture species. The pasture cannot support the desired number of livestock. A poor-quality pasture may increase the hazard of water erosion and increase the runoff of pollutants. Planting drought-resistant species of grasses and legumes helps to establish a cover of vegetation. The plants should not be clipped or grazed until they are sufficiently established.

Frost heave is a limitation in areas where the soils have a moderate or high potential for frost action. It occurs when ice lenses or bands that drive an ice wedge between two layers develop near the surface layer of a soil. The ice wedges heave the overlying soil layer upward, snapping the roots. Soils that have a low content of sand have small pores that hold water and enable ice lenses to form. Selecting adapted forage and hay varieties can help to minimize the effects of frost heave. Timely deferment of grazing helps to maintain a protective cover that insulates the soil, thereby reducing the effects of frost heave.

Soils in which the depth to bedrock is 40 inches or less have a restricted root zone and a limited available moisture capacity. Planting adapted forage and hay varieties helps to overcome this limitation. The plants should not be clipped or grazed until they are sufficiently established. Rotation grazing and timely deferment of grazing help to maintain healthy stands of forage plants, which, in turn, reduce the runoff rate and thus conserve moisture.

Soils that have a wind erodibility group (WEG) of 1 or 2 are susceptible to wind erosion. If the soil is tilled for the reseeding of pasture or hay crops, planting winter cover crops, applying a system of conservation tillage that leaves crop residue on the surface, and keeping the surface rough help to control wind erosion. Overgrazing or grazing when the soil is wet reduces the extent of the plant cover and thus increases the susceptibility to wind erosion. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition.

Frequent or occasional flooding can damage forage stands and delay harvesting in some years. Dikes and diversions help to control the extent of damage caused by floodwater. Selecting species of grasses and legumes adapted to wet conditions improves forage production. Restricted grazing during wet periods helps to keep the pasture in good condition.

Overgrazing or grazing when the soil is wet reduces the extent of plant cover and results in surface compaction and poor tilth and thus increases the susceptibility to erosion. Somewhat poorly drained, poorly drained, or severely eroded soils in which the content of clay in the surface layer is 27 percent or more are considered to have

poor tilth. Proper stocking rates, rotation grazing, and timely deferment of grazing, especially during wet periods, help to keep the pasture in good condition. The proper location of livestock watering facilities helps to minimize surface compaction or the formation of ruts by making it unnecessary for cattle to travel long distances up and down the steeper slopes.

The use of equipment is limited in areas where the average slope is more than 10 percent. This limitation can cause rapid wear of equipment and can hinder fertilization, harvesting, pasture renovation, and seedbed preparation. It cannot be easily overcome.

Low fertility occurs in areas where the average content of organic matter in the surface layer is 1 percent or less or the cation-exchange capacity (CEC) is 7 milliequivalents or less per 100 grams of soil. Low fertility affects the health and vigor of the plants and thus has a direct impact on the quantity and quality of livestock. Additions of fertilizer and other organic material should be based on the results of soil tests, on the needs of specific plant species, and on the desired level of production.

Soils that have a root-restrictive layer have a dense layer of till within a depth of 40 inches. This layer inhibits root penetration. This limitation lowers the total amount of water that is available to plants. Deep-rooted perennial legumes and grasses make the most efficient use of the limited amount of available water. Selecting drought-tolerant species of legumes and grasses improves forage production.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 7. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents (Olson and Lang, 2000). Available yield data from nearby counties and results of field trials and demonstrations also are considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting that ensures the smallest possible loss.

The estimated yields reflect the productive capacity of each soil for each of the principal crops and pasture plants. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in table 7 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), or the amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

The local office of the Natural Resources Conservation Service or the Cooperative Extension Service can provide information about forage yields other than those shown in table 7.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for forestland or for engineering purposes.

In the capability system, soils are generally grouped at three levels—capability class, subclass, and unit (USDA, 1961).

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants or that require very careful management, or both.

Class 5 soils are subject to little or no erosion but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2*e*. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

In class 1 there are no subclasses because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, forestland, or wildlife habitat.

Capability units are soil groups within a subclass. The soils in a capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, 2e-4 and 3e-6. These units are not given in all soil surveys.

The capability classification of the soils in this survey area is given in the section "Soil Series and Detailed Soil Map Units" and in the yields table.

Prime Farmland

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

About 163,540 acres, or 45 percent of the county, meets the requirements for prime farmland.

The map units in the survey area that are considered prime farmland are listed in table 8. This list does not constitute a recommendation for a particular land use. On some soils included in the list, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 5. The location is shown on the detailed soil maps. Some of the soil qualities that affect use and management are described under the heading "Soil Series and Detailed Soil Map Units."

Hydric Soils

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological

wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches (fig. 10). This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform. Table 9 lists the map units that include hydric soils, either as major components or as soils of minor extent. The hydric soils listed in the table meet the definition of a hydric soil and have at least one of the hydric soil indicators. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and Vasilas, 2006).

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
 - B. are poorly drained or very poorly drained and have either:
 - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or



Figure 10.—A profile of a Sable soil showing “splotches” of browner colors in a dominantly gray subsoil, which are typical of hydric soils.

- 2) a water table at a depth of 0.5 foot or less during the growing season if saturated hydraulic conductivity (K_{sat}) is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
- 3) a water table at a depth of 1.0 foot or less during the growing season if saturated hydraulic conductivity (K_{sat}) is less than 6.0 in/hr in any layer within a depth of 20 inches.
3. Soils that are frequently ponded for long or very long duration during the growing season.
4. Soils that are frequently flooded for long or very long duration during the growing season.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, yards, fruit trees, gardens, and cropland from wind and snow; help to keep snow on fields; and provide food and cover for wildlife. Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Table 10 shows the height that locally grown trees and shrubs are expected to reach in 20 years on soils in the survey area. The estimates in the table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service or from a commercial nursery.

Forestland Management and Productivity

The tables described in this section rate the soils according to the limitations that affect various aspects of forestland management and show the potential productivity of the soils for wood crops.

Forestland Management

In table 11, interpretive ratings are given for various aspects of forestland management. The ratings are both verbal and numerical.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or online at <http://soils.usda.gov/technical/>.

For *limitations affecting construction of haul roads and log landings*, the ratings are based on slope, flooding, permafrost, plasticity index, the hazard of soil slippage, content of sand, the Unified classification, rock fragments on or below the surface, depth to a restrictive layer that is indurated, depth to a water table, and ponding. The limitations are described as slight, moderate, or severe. A rating of *slight* indicates that no significant limitations affect construction activities, *moderate* indicates that one or more limitations can cause some difficulty in construction, and *severe* indicates that one or more limitations can make construction very difficult or very costly.

The ratings of *suitability for log landings* are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to use as log landings. *Well suited* indicates that the soil has features that are favorable for the specified management

aspect and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately suited* indicates that the soil has features that are moderately favorable for the specified management aspect. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified management aspect. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified management aspect or that extreme measures are needed to overcome the undesirable soil properties.

Ratings in the column *soil rutting hazard* are based on depth to a water table, rock fragments on or below the surface, the Unified classification, depth to a restrictive layer, and slope. Ruts form as a result of the operation of forest equipment. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that the soil is subject to little or no rutting, *moderate* indicates that rutting is likely, and *severe* indicates that ruts form readily.

Forestland Productivity

Table 12 can help woodland owners or forest managers plan the use of soils for wood crops. Only those soils commonly used for wood crops are listed.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or online at <http://soils.usda.gov/technical/>.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Suggested trees to plant are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Recreation

The soils of the survey area are rated in tables 13a and 13b according to limitations that affect their suitability for recreation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the recreational uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate

gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The ratings in the tables are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewer lines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation also are important. Soils that are subject to flooding are limited for recreational uses by the duration and intensity of flooding and the season when flooding occurs. In planning recreational facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

The information in tables 13a and 13b can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock or a cemented pan are the main concerns affecting the development of camp areas. The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or a cemented pan, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 14, the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, brome grass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed, wheatgrass, and grama.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian olive, autumn olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the data in the tables described under the heading "Soil Properties."

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet.

Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, reclamation material, roadfill, and topsoil; plan structures for water management; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance (fig. 11). Tables 15a and 15b show the degree and kind of soil limitations that affect dwellings with and without basements, small commercial buildings, local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the tables are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate



Figure 11.—A building site excavation in an area of Flagg soils near Cedarville.

gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount

of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Tables 16a and 16b show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the

soil between depths of 24 and 60 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or a cemented pan interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or a cemented pan, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a cemented pan to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or a cemented pan, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, nonrippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The

surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or a cemented pan.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, a fractured cemented pan, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or a cemented pan, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread; sandy soils are subject to wind erosion.

Slope affects the ease of excavation and of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Construction Materials

Tables 17a and 17b give information about the soils as potential sources of gravel, sand, reclamation material, roadfill, and topsoil. Normal compaction, minor processing, and other standard construction practices are assumed.

Gravel and *sand* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 17a, only the likelihood of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the bottom layer of the soil contains sand or gravel, the soil is considered a likely source regardless of thickness. The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

The soils are rated *good*, *fair*, or *poor* as potential sources of sand and gravel. A rating of *good* or *fair* means that the source material is likely to be in or below the soil. The bottom layer and the thickest layer of the soils are assigned numerical ratings.

These ratings indicate the likelihood that the layer is a source of sand or gravel. The number 0.00 indicates that the layer is a poor source. The number 1.00 indicates that the layer is a good source. A number between 0.00 and 1.00 indicates the degree to which the layer is a likely source.

In table 17b, the rating class terms are *good*, *fair*, and *poor*. The features that limit the soils as sources of these materials are specified in the table. The numerical ratings given after the specified features indicate the degree to which the features limit the soils as sources of reclamation material, roadfill, and topsoil. The lower the number, the greater the limitation.

Reclamation material is used in areas that have been drastically disturbed by surface mining or similar activities. When these areas are reclaimed, layers of soil material or unconsolidated geological material, or both, are replaced in a vertical sequence. The reconstructed soil favors plant growth. The ratings in the table do not apply to quarries and other mined areas that require an offsite source of reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or a cemented pan, and toxic material.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Tables 18a, 18b, and 18c give information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; aquifer-fed excavated ponds; grassed waterways and surface drains; terraces and diversions; tile drains and underground outlets; sprinkler irrigation; and drip or trickle irrigation. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are

limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Table 18a

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Table 18b

Grassed waterways and surface drains are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, a low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of wind erosion or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Tile drains and underground outlets are used in some areas to remove excess subsurface and surface water from the soil. The ratings in the table apply to undisturbed soils that commonly have a seasonal high water table within a depth of about 3.5 feet. Current land use is not considered in the ratings. Depth to bedrock, a dense layer, or a cemented pan, the content of large stones, and the content of clay influence the ease of digging, filling, and compacting. A seasonal high water table, ponding, and flooding may restrict the period when excavations can be made. The slope influences the use of machinery. Soil texture and depth to the water table influence the resistance to sloughing. Subsidence of organic layers influences grade and stability of tile drains. Limitations affecting areas where the tile line passes through soils in which the water table is generally below a depth of 3.5 feet are provided in the table that includes the column "shallow excavations," which is described under the heading "Building Site Development."

Table 18c

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

In a *sprinkler* irrigation system, water is sprayed over the soil surface through pipes or nozzles from a pressure system.

In a *drip or trickle* irrigation system, water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey.

Soil properties are ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 19 gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter (fig. 12). "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2005) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group

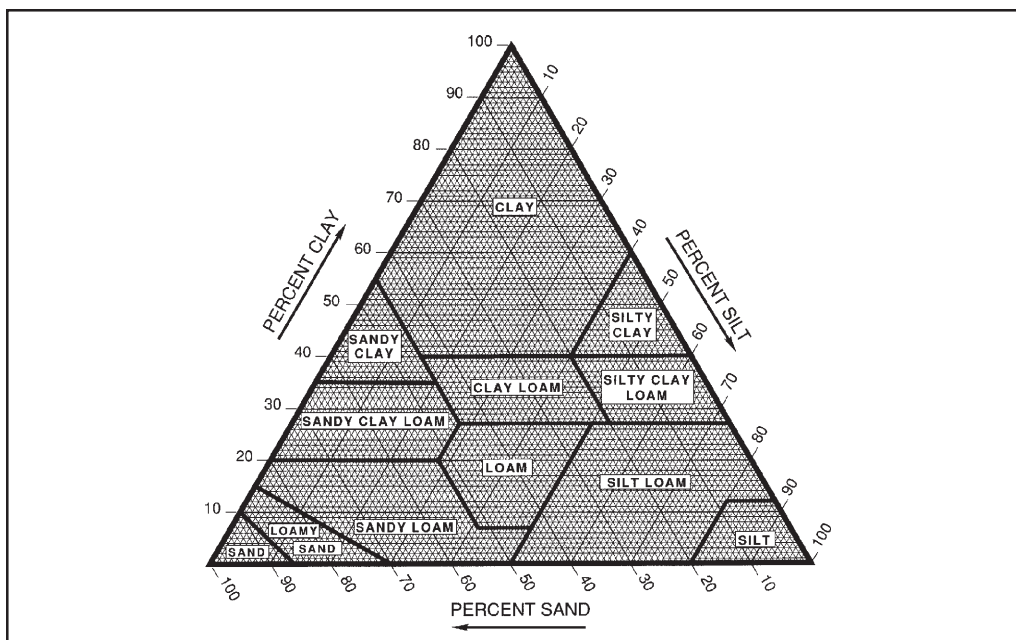


Figure 12.—Percentages of clay, silt, and sand in the basic USDA soil textural classes.

index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 20 shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as

classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In the table, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $1/3$ - or $1/10$ -bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at $1/3$ - or $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 20, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table 20 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are described in the "National Soil Survey Handbook" (available online at <http://soils.usda.gov>).

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

Chemical Properties

Table 21 shows estimates of some chemical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Cation-exchange capacity is the total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Effective cation-exchange capacity refers to the sum of exchangeable cations plus aluminum expressed in terms of milliequivalents per 100 grams of soil. It is determined for soils that have pH of less than 5.5.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Water Features

Table 22 gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 22 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall

or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and frequency of flooding are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year). *Common* is used when the occasional and frequent classes are grouped for certain purposes.

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Water table refers to a saturated zone in the soil. Table 22 indicates the depth to the top (*upper limit*) and base (*lower limit*) of the saturated zone for the specified *months* in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

The table also shows the *kind of water table*, that is, apparent or perched. An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Soil Features

Table 23 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. In the table, *depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

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Glossary

Many of the terms relating to landforms, geology, and geomorphology are defined in more detail in the “National Soil Survey Handbook” (available in local offices of the Natural Resources Conservation Service or on the Internet).

Ablation till. Loose, relatively permeable earthy material deposited during the downwasting of nearly static glacial ice, either contained within or accumulated on the surface of the glacier.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Unconsolidated material, such as gravel, sand, silt, clay, and various mixtures of these, deposited on land by running water.

Alpha,alpha-dipyridyl. A compound that when dissolved in ammonium acetate is used to detect the presence of reduced iron (Fe II) in the soil. A positive reaction implies reducing conditions and the likely presence of redoximorphic features.

Animal unit month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Aquic conditions. Current soil wetness characterized by saturation, reduction, and redoximorphic features.

Argillic horizon. A subsoil horizon characterized by an accumulation of illuvial clay.

Aspect. The direction toward which a slope faces. Also called slope aspect.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Backswamp. A flood-plain landform. Extensive, marshy or swampy, depressed areas of flood plains between natural levees and valley sides or terraces.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

- Base saturation.** The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.
- Base slope** (geomorphology). A geomorphic component of hills consisting of the concave to linear (perpendicular to the contour) slope that, regardless of the lateral shape, forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).
- Beach deposits.** Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.
- Beach ridge.** A low, essentially continuous mound of beach or beach-and-dune material accumulated by the action of waves and currents on the backshore of a beach, beyond the present limit of storm waves or the reach of ordinary tides, and occurring singly or as one of a series of approximately parallel deposits. The ridges are roughly parallel to the shoreline and represent successive positions of an advancing shoreline.
- Bedding plane.** A planar or nearly planar bedding surface that visibly separates each successive layer of stratified sediment or rock (of the same or different lithology) from the preceding or following layer; a plane of deposition. It commonly marks a change in the circumstances of deposition and may show a parting, a color difference, a change in particle size, or various combinations of these. The term is commonly applied to any bedding surface, even one that is conspicuously bent or deformed by folding.
- Bedrock.** The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.
- Bedrock-controlled topography.** A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.
- Bench terrace.** A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.
- Bisequum.** Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.
- Board foot.** A unit of measurement represented by a board 1 foot wide, 1 foot long, and 1 inch thick.
- Bog.** Waterlogged, spongy ground, consisting primarily of mosses, containing acidic, decaying vegetation (such as sphagnum, sedges, and heaths) that develops into peat.
- Bottom land.** An informal term loosely applied to various portions of a flood plain.
- Boulders.** Rock fragments larger than 2 feet (60 centimeters) in diameter.
- Brush management.** Use of mechanical, chemical, or biological methods to make conditions favorable for reseeding or to reduce or eliminate competition from woody vegetation and thus allow understory grasses and forbs to recover. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.
- Calcareous soil.** A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.
- Canopy.** The leafy crown of trees or shrubs. (See Crown.)
- Capillary water.** Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.
- Catena.** A sequence, or “chain,” of soils on a landscape that formed in similar kinds of parent material and under similar climatic conditions but that have different characteristics as a result of differences in relief and drainage.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. See Terracettes.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. See Redoximorphic features.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A dense, compact, slowly permeable subsoil layer that contains much more clay than the overlying materials, from which it is separated by a sharply defined boundary. A claypan is commonly hard when dry and plastic and sticky when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. Unconsolidated, unsorted earth material being transported or deposited on side slopes and/or at the base of slopes by mass movement (e.g., direct gravitational action) and by local, unconcentrated runoff.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Concretions. See Redoximorphic features.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the "Soil Survey Manual."

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). A type of limnic layer composed predominantly of fecal material derived from aquatic animals.

Cord. A unit of measurement of stacked wood. A standard cord occupies 128 cubic feet with dimensions of 4 feet by 4 feet by 8 feet.

Corrosion (geomorphology). A process of erosion whereby rocks and soil are removed or worn away by natural chemical processes, especially by the solvent action of running water, but also by other reactions, such as hydrolysis, hydration, carbonation, and oxidation.

Corrosion (soil survey interpretations). Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression. Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage. An open depression has a natural outlet for surface drainage.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diamicton. A generic term for any nonlithified, nonsorted or poorly sorted sediment that contains a wide range of particle sizes, such as coarse fragments contained within a fine earth matrix (e.g., till); used when the genetic content of the sediment is uncertain.

Diatomaceous earth. A geologic deposit of fine, grayish siliceous material composed chiefly or entirely of the remains of diatoms.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized—*excessively drained*, *somewhat excessively drained*, *well drained*, *moderately well drained*, *somewhat poorly drained*, *poorly drained*, and *very poorly drained*. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. A general term for a course or channel along which water moves in draining an area. A term restricted to relatively small, linear depressions that at some time move concentrated water and either do not have a defined channel or have only a small defined channel.

Drift. A general term applied to all mineral material (clay, silt, sand, gravel, and boulders) transported by a glacier and deposited directly by or from the ice or transported by running water emanating from a glacier. Drift includes unstratified material (till) that forms moraines and stratified deposits that form outwash plains, eskers, kames, varves, and glaciofluvial sediments. The term is generally applied to Pleistocene glacial deposits in areas that no longer contain glaciers.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact till that has a core of bedrock or drift. It commonly has a blunt nose facing the direction from which the ice approached and a gentler slope tapering in the other direction. The longer axis is parallel to the general direction of glacier flow. Drumlins are products of streamline (laminar) flow of glaciers, which molded the subglacial floor through a combination of erosion and deposition.

Duff. A generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand), either barren and capable of movement from place to place or covered and stabilized with vegetation but retaining its characteristic shape.

Earthy fill. See Mine spoil.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian deposit. Sand-, silt-, or clay-sized clastic material transported and deposited primarily by wind, commonly in the form of a dune or a sheet of sand or loess.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Erosion pavement. A surficial lag concentration or layer of gravel and other rock fragments that remains on the soil surface after sheet or rill erosion or wind has removed the finer soil particles and that tends to protect the underlying soil from further erosion.

Erosion surface. A land surface shaped by the action of erosion, especially by running water.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Most commonly applied to cliffs produced by differential erosion. Synonym: scarp.

Esker. A long, narrow, sinuous, steep-sided ridge of stratified sand and gravel deposited as the bed of a stream flowing in an ice tunnel within or below the ice (subglacial) or between ice walls on top of the ice of a wasting glacier and left behind as high ground when the ice melted. Eskers range in length from less than a kilometer to more than 160 kilometers and in height from 3 to 30 meters.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the oven-dry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity*, *normal moisture capacity*, or *capillary capacity*.

Fill slope. A sloping surface consisting of excavated soil material from a road cut. It commonly is on the downhill side of the road.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. An obsolete, informal term loosely applied to the lowest flood-plain steps that are subject to regular flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. The nearly level plain that borders a stream and is subject to flooding unless protected artificially.

Flood-plain landforms. A variety of constructional and erosional features produced by stream channel migration and flooding. Examples include backswamps, flood-

plain splays, meanders, meander belts, meander scrolls, oxbow lakes, and natural levees.

Flood-plain splay. A fan-shaped deposit or other outspread deposit formed where an overloaded stream breaks through a levee (natural or artificial) and deposits its material (commonly coarse grained) on the flood plain.

Flood-plain step. An essentially flat, terrace-like alluvial surface within a valley that is frequently covered by floodwater from the present stream; any approximately horizontal surface still actively modified by fluvial scour and/or deposition. May occur individually or as a series of steps.

Fluvial. Of or pertaining to rivers or streams; produced by stream or river action.

Footslope. The concave surface at the base of a hillslope. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Geomorphology. The science that treats the general configuration of the earth's surface; specifically the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

Glaciofluvial deposits. Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur in the form of outwash plains, valley trains, deltas, kames, eskers, and kame terraces.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are bedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A small channel with steep sides caused by erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hard to reclaim (in tables). Reclamation is difficult after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head slope (geomorphology). A geomorphic component of hills consisting of a laterally concave area of a hillside, especially at the head of a drainageway. The overland waterflow is converging.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

Herbaceous peat. An accumulation of organic material, decomposed to some degree, that is predominantly the remains of sedges, reeds, cattails, and other herbaceous plants.

High-chroma zones. Zones having chroma of 3 or more. Typical color in areas of iron concentrations.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A generic term for an elevated area of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline. Slopes are generally more than 15 percent. The distinction between a hill and a mountain is arbitrary and may depend on local usage.

Hillslope. A generic term for the steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of a hill.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the "Soil Survey Manual." The major horizons of mineral soil are as follows:

O horizon.—An organic layer of fresh and decaying plant residue.

L horizon.—A layer of organic and mineral limnic materials, including coprogenous earth (sedimentary peat), diatomaceous earth, and marl.

A horizon.—The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon.—The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a

layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon.—The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon.—Soft, consolidated bedrock beneath the soil.

R layer.—Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential.

The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Ice-walled lake plain. A relict surface marking the floor of an extinct lake basin that was formed on solid ground and surrounded by stagnant ice in a stable or unstable superglacial environment on stagnation moraines. As the ice melted, the lake plain became perched above the adjacent landscape. The lake plain is well sorted, generally fine textured, stratified deposits.

Igneous rock. Rock that was formed by cooling and solidification of magma and that has not been changed appreciably by weathering since its formation. Major varieties include plutonic and volcanic rock (e.g., andesite, basalt, and granite).

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. A landform composed of the relatively undissected upland or ridge between two adjacent valleys containing streams flowing in the same general direction. An elevated area between two drainageways that sheds water to those drainageways.

Interfluve (geomorphology). A geomorphic component of hills consisting of the uppermost, comparatively level or gently sloping area of a hill; shoulders of backwearing hillslopes can narrow the upland or can merge, resulting in a strongly convex shape.

Intermittent stream. A stream, or reach of a stream, that does not flow year-round but that is commonly dry for 3 or more months out of 12 and whose channel is generally below the local water table. It flows only during wet periods or when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron depletions. See Redoximorphic features.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

Border.—Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.

Controlled flooding.—Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.

Corrugation.—Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.

Drip (or trickle).—Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.

Furrow.—Water is applied in small ditches made by cultivation implements.

Furrows are used for tree and row crops.

Sprinkler.—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

Subirrigation.—Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.

Wild flooding.—Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. A low mound, knob, hummock, or short irregular ridge composed of stratified sand and gravel deposited by a subglacial stream as a fan or delta at the margin of a melting glacier; by a supraglacial stream in a low place or hole on the surface of the glacier; or as a ponded deposit on the surface or at the margin of stagnant ice.

Karst (topography). A kind of topography that formed in limestone, gypsum, or other soluble rocks by dissolution and that is characterized by closed depressions, sinkholes, caves, and underground drainage.

Knoll. A small, low, rounded hill rising above adjacent landforms.

Ksat. Saturated hydraulic conductivity. (See Permeability.)

Lacustrine deposit. Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake bed. The bottom of a lake; a lake basin.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lamella. A thin (commonly less than 1 cm thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

Landslide. A general, encompassing term for most types of mass movement landforms and processes involving the downslope transport and outward deposition of soil and rock materials caused by gravitational forces; the movement may or may not involve saturated materials. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Leaching. The removal of soluble material from soil or other material by percolating water.

Linear extensibility. Refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. Linear extensibility is used to determine the shrink-swell potential of soils. It is an expression of the volume change between the water content of the clod at $1/3$ - or $1/10$ -bar tension (33kPa or 10kPa tension) and oven dryness. Volume change is influenced by the amount and type of clay minerals in the soil. The volume change is the percent change for the whole soil. If it is expressed as a fraction, the resulting value is COLE, coefficient of linear extensibility.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loess. Material transported and deposited by wind and consisting dominantly of silt-sized particles.

Low strength. The soil is not strong enough to support loads.

Low-chroma zones. Zones having chroma of 2 or less. Typical color in areas of iron depletions.

Low-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

MAP. Mean annual precipitation, expressed in inches.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal proportions; formed primarily under freshwater lacustrine conditions but also formed in more saline environments.

Mass movement. A generic term for the dislodgment and downslope transport of soil and rock material as a unit under direct gravitational stress.

Masses. See Redoximorphic features.

Meander belt. The zone within which migration of a meandering channel occurs; the flood-plain area included between two imaginary lines drawn tangential to the outer bends of active channel loops.

- Meander scar.** A crescent-shaped, concave or linear mark on the face of a bluff or valley wall, produced by the lateral erosion of a meandering stream that impinged upon and undercut the bluff.
- Meander scroll.** One of a series of long, parallel, close-fitting, crescent-shaped ridges and troughs formed along the inner bank of a stream meander as the channel migrated laterally down-valley and toward the outer bank.
- Mechanical treatment.** Use of mechanical equipment for seeding, brush management, and other management practices.
- Medium textured soil.** Very fine sandy loam, loam, silt loam, or silt.
- Metamorphic rock.** Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement at depth in the earth's crust. Nearly all such rocks are crystalline.
- Mine spoil.** An accumulation of displaced earthy material, rock, or other waste material removed during mining or excavation. Also called earthy fill.
- Mineral soil.** Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.
- Minimum tillage.** Only the tillage essential to crop production and prevention of soil damage.
- Miscellaneous area.** A kind of map unit that has little or no natural soil and supports little or no vegetation.
- MLRA (major land resource area).** A geographic area characterized by a particular pattern of land uses, elevation and topography, soils, climate, water resources, and potential natural vegetation.
- Moderately coarse textured soil.** Coarse sandy loam, sandy loam, or fine sandy loam.
- Moderately fine textured soil.** Clay loam, sandy clay loam, or silty clay loam.
- Mollic epipedon.** A thick, dark, humus-rich surface horizon (or horizons) that has high base saturation and pedogenic soil structure. It may include the upper part of the subsoil.
- Moraine.** In terms of glacial geology, a mound, ridge, or other topographically distinct accumulation of unsorted, unstratified drift, predominantly till, deposited primarily by the direct action of glacial ice in a variety of landforms. Also, a general term for a landform composed mainly of till (except for kame moraines, which are composed mainly of stratified outwash) that has been deposited by a glacier. Some types of moraines are disintegration, end, ground, kame, lateral, recessional, and terminal.
- Morphology, soil.** The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.
- Mottling, soil.** Irregular spots of different colors that vary in number and size. Descriptive terms are as follows: abundance—*few*, *common*, and *many*; size—*fine*, *medium*, and *coarse*; and contrast—*faint*, *distinct*, and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).
- Muck.** Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)
- Mucky peat.** Unconsolidated soil material consisting primarily of organic matter that is in an intermediate stage of decomposition such that a significant part of the material can be recognized and a significant part of the material cannot be recognized.

Munsell notation. A designation of color by degrees of three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. See Redoximorphic features.

Nose slope (geomorphology). A geomorphic component of hills consisting of the projecting end (laterally convex area) of a hillside. The overland waterflow is predominantly divergent. Nose slopes consist dominantly of colluvium and slope-wash sediments (for example, slope alluvium).

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Organic matter. Plant and animal residue in the soil in various stages of decomposition. The content of organic matter in the surface layer is described as follows:

Very low	less than 0.5 percent
Low	0.5 to 1.0 percent
Moderately low	1.0 to 2.0 percent
Moderate	2.0 to 4.0 percent
High	4.0 to 8.0 percent
Very high	more than 8.0 percent

Outwash. Stratified and sorted sediments (chiefly sand and gravel) removed or “washed out” from a glacier by meltwater streams and deposited in front of or beyond the end moraine or the margin of a glacier. The coarser material is deposited nearer to the ice.

Outwash plain. An extensive lowland area of coarse textured glaciofluvial material. An outwash plain is commonly smooth; where pitted, it generally is low in relief.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan*, *fragipan*, *claypan*, *plowpan*, and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A layer of sediment, eroded from the shoulder and backslope of an erosional slope, that lies on and is being (or was) transported across a gently sloping erosional surface at the foot of a receding hill or mountain slope.

Pedon. The smallest volume that can be called “a soil.” A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The movement of water through the soil.

Permeability. The quality of the soil that enables water or air to move downward through the profile. The rate at which a saturated soil transmits water is accepted as a measure of this quality. In soil physics, the rate is referred to as “saturated hydraulic conductivity,” which is defined in the “Soil Survey Manual.” In line with

conventional usage in the engineering profession and with traditional usage in published soil surveys, this rate of flow continues to be expressed as “permeability.” Terms describing permeability, measured in inches per hour, are as follows:

Impermeable	less than 0.0015 inch
Very slow	0.0015 to 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	more than 20 inches

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau (geomorphology). A comparatively flat area of great extent and elevation; specifically, an extensive land region that is considerably elevated (more than 100 meters) above the adjacent lower lying terrain, is commonly limited on at least one side by an abrupt descent, and has a flat or nearly level surface. A comparatively large part of a plateau surface is near summit level.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Poletimber. Hardwood trees ranging from 5 to 11 inches and conifers ranging from 5 to 9 inches in diameter at breast height.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Pore linings. See Redoximorphic features.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. Deliberately burning an area for specific management purposes, under the appropriate conditions of weather and soil moisture and at the proper time of day.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed as pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Ultra acid	less than 3.5
Extremely acid	3.5 to 4.4
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Moderately acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Slightly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

Redoximorphic concentrations. See Redoximorphic features.

Redoximorphic depletions. See Redoximorphic features.

Redoximorphic features. Redoximorphic features are associated with wetness and result from alternating periods of reduction and oxidation of iron and manganese compounds in the soil. Reduction occurs during saturation with water, and oxidation occurs when the soil is not saturated. Characteristic color patterns are created by these processes. The reduced iron and manganese ions may be removed from a soil if vertical or lateral fluxes of water occur, in which case there is no iron or manganese precipitation in that soil. Wherever the iron and manganese are oxidized and precipitated, they form either soft masses or hard concretions or nodules. Movement of iron and manganese as a result of redoximorphic processes in a soil may result in redoximorphic features that are defined as follows:

1. Redoximorphic concentrations.—These are zones of apparent accumulation of iron-manganese oxides, including:
 - A. Nodules and concretions, which are cemented bodies that can be removed from the soil intact. Concretions are distinguished from nodules on the basis of internal organization. A concretion typically has concentric layers that are visible to the naked eye. Nodules do not have visible organized internal structure; *and*
 - B. Masses, which are noncemented concentrations of substances within the soil matrix; *and*
 - C. Pore linings, i.e., zones of accumulation along pores that may be either coatings on pore surfaces or impregnations from the matrix adjacent to the pores.
2. Redoximorphic depletions.—These are zones of low chroma (chromas less than those in the matrix) where either iron-manganese oxides alone or both iron-manganese oxides and clay have been stripped out, including:
 - A. Iron depletions, i.e., zones that contain low amounts of iron and manganese oxides but have a clay content similar to that of the adjacent matrix; *and*

B. Clay depletions, i.e., zones that contain low amounts of iron, manganese, and clay (often referred to as silt coatings or skeletans).

3. Reduced matrix.—This is a soil matrix that has low chroma *in situ* but undergoes a change in hue or chroma within 30 minutes after the soil material has been exposed to air.

Reduced matrix. See Redoximorphic features.

Regolith. All unconsolidated earth materials above the solid bedrock. It includes material weathered in place from all kinds of bedrock and alluvial, glacial, eolian, lacustrine, and pyroclastic deposits.

Relief. The relative difference in elevation between the upland summits and the lowlands or valleys of a given region.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as bedrock disintegrated in place.

Rill. A very small, steep-sided channel resulting from erosion and cut in unconsolidated materials by concentrated but intermittent flow of water. A rill generally is not an obstacle to wheeled vehicles and is shallow enough to be smoothed over by ordinary tillage.

Rise. A slight increase in elevation of the land surface, typically with a broad summit and gently sloping sides.

Riser. The vertical or steep side slope (e.g., escarpment) of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural, steplike landforms, such as successive stream terraces.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sapling. A tree ranging from 1 to 5 inches in diameter at breast height.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Saturated hydraulic conductivity (Ksat). See Permeability.

Saturation. Wetness characterized by zero or positive pressure of the soil water. Under conditions of saturation, the water will flow from the soil matrix into an unlined auger hole.

Sawtimber. Hardwood trees more than 11 inches and conifers more than 9 inches in diameter at breast height.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Sedimentary rock. A consolidated deposit of clastic particles, chemical precipitates, or organic remains accumulated at or near the surface of the earth under normal low temperature and pressure conditions. Sedimentary rocks include consolidated equivalents of alluvium, colluvium, drift, and eolian, lacustrine, and marine

deposits. Examples are sandstone, siltstone, mudstone, claystone, shale, conglomerate, limestone, dolomite, and coal.

Seedling. A tree less than 1 inch in diameter at breast height.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike. All the soils of a given series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock that formed by the hardening of a deposit of clay, silty clay, or silty clay loam and that has a tendency to split into thin layers.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shoulder. The convex, erosional surface near the top of a hillslope. A shoulder is a transition from summit to backslope.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Side slope (geomorphology). A geomorphic component of hills consisting of a laterally planar area of a hillside. The overland waterflow is predominantly parallel. Side slopes are dominantly colluvium and slope-wash sediments.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. An indurated silt having the texture and composition of shale but lacking its fine lamination or fissility; a massive mudstone in which silt predominates over clay.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A closed, circular or elliptical depression, commonly funnel shaped, characterized by subsurface drainage and formed either by dissolution of the surface of underlying bedrock (e.g., limestone, gypsum, or salt) or by collapse of underlying caves within bedrock. Complexes of sinkholes in carbonate-rock terrain are the main components of karst topography.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides (pedogenic). Grooved, striated, and/or glossy (shiny) slip faces on structural peds, such as wedges; produced by shrink-swell processes, most commonly in soils that have a high content of expansive clays.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope alluvium. Sediment gradually transported down the slopes of mountains or hills primarily by nonchannel alluvial processes (i.e., slope-wash processes) and characterized by particle sorting. Lateral particle sorting is evident on long slopes. In a profile sequence, sediments may be distinguished by differences in size and/or specific gravity of rock fragments and may be separated by stone lines. Burnished peds and sorting of rounded or subrounded pebbles or cobbles distinguish these materials from unsorted colluvial deposits.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. In a vertical cross section, a line formed by scattered fragments or a discrete layer of angular and subangular rock fragments (commonly a gravel- or cobble-sized lag concentration) that formerly was draped across a topographic surface and was later buried by additional sediments. A stone line generally caps material that was subject to weathering, soil formation, and erosion before burial. Many stone lines seem to be buried erosion pavements, originally formed by sheet and rill erosion across the land surface.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A type of stream terrace; formed as an erosional surface cut on bedrock and thinly mantled with stream deposits (alluvium).

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel, originally formed near the level of the stream; represents the remnants of an abandoned flood plain, stream bed, or valley floor produced during a former state of fluvial erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to wind erosion and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during

preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The potential decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid, mineral layers. Subsidence, as a result of drainage, is attributed to (1) shrinkage from drying, (2) consolidation because of the loss of ground-water buoyancy, (3) compaction from tillage or manipulation, (4) wind erosion, (5) burning, and (6) biochemical oxidation.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Swale. A slight depression in the midst of generally level land. A shallow depression in an undulating ground moraine resulting from uneven glacial deposition.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. An end moraine that marks the farthest advance of a glacier. It typically has the form of a massive arcuate or concentric ridge, or complex of ridges, and is underlain by till and other types of drift.

Terrace (conservation). An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geomorphology). A steplike surface, bordering a valley floor or shoreline, that represents the former position of a flood plain, lake, or seashore. The term is usually applied both to the relatively flat summit surface (tread) that was cut or built by stream or wave action and to the steeper descending slope (scarp or riser) that has graded to a lower base level of erosion.

Terracettes. Small, irregular steplike forms on steep hillslopes, especially in pasture, formed by creep or erosion of surficial materials that may be induced or enhanced by trampling of livestock, such as sheep or cattle.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till. Dominantly unsorted and nonstratified drift, generally unconsolidated and deposited directly by a glacier without subsequent reworking by meltwater, and consisting of a heterogeneous mixture of clay, silt, sand, gravel, stones, and boulders; rock fragments of various lithologies are embedded within a finer matrix that can range from clay to sandy loam.

Till plain. An extensive area of level to gently undulating soils underlain predominantly by till and bounded at the distal end by subordinate recessional or end moraines.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toeslope. The gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley or closed-depression floors.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, in soils in extremely small amounts. They are essential to plant growth.

Tread. The flat to gently sloping, topmost, laterally extensive slope of terraces, flood-plain steps, or other stepped landforms; commonly a recurring part of a series of natural steplike landforms, such as successive stream terraces.

Upland. An informal, general term for the higher ground of a region, in contrast with a low-lying adjacent area, such as a valley or plain, or for land at a higher elevation than the flood plain or low stream terrace; land above the footslope zone of the hillslope continuum.

Valley fill. The unconsolidated sediment deposited by any agent (water, wind, ice, or mass wasting) so as to fill or partly fill a valley.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical disintegration, chemical decomposition, and biologically induced changes in rocks or other deposits at or near the earth's surface by atmospheric or biologic agents or by circulating surface waters but involving essentially no transport of the altered material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Woody peat. An accumulation of organic material that is predominantly composed of trees, shrubs, and other woody plants.

Tables

Table 1.--Temperature and Precipitation
(Recorded in the period 1971-2000 at Freeport, Illinois)

	Temperature						Precipitation				
Month				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	26.4	9.0	17.7	52	-21	0	1.33	0.64	2.03	3	9.8
February---	32.5	14.2	23.4	59	-16	0	1.33	.43	2.23	3	6.5
March-----	44.3	25.3	34.8	76	1	16	2.14	.92	3.22	4	4.1
April-----	58.1	36.4	47.2	86	18	79	3.23	1.79	4.52	6	1.6
May-----	70.6	47.7	59.1	91	30	298	3.96	1.86	5.90	7	.0
June-----	79.8	57.1	68.4	95	42	553	4.46	2.17	6.73	7	.0
July-----	83.6	61.7	72.7	98	48	701	3.57	1.98	5.06	6	.0
August-----	81.0	59.1	70.0	96	45	621	4.11	2.36	5.49	6	.0
September--	73.5	49.9	61.7	92	32	360	3.67	1.37	5.93	5	.0
October----	61.7	38.3	50.0	85	22	109	2.58	.98	3.94	4	.0
November---	45.6	27.8	36.7	71	5	14	2.69	1.30	4.02	5	2.6
December---	31.5	15.4	23.5	58	-13	1	1.72	.85	2.52	4	7.6
Yearly:											
Average---	57.4	36.8	47.1	---	---	---	---	---	---	---	---
Extreme---	101	-27	---	98	-23	---	---	---	---	---	---
Total-----	---	---	---	---	---	2,752	34.79	29.48	40.46	60	32.2

* A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50 degrees F).

Table 2.--Freeze Dates in Spring and Fall
(Recorded in the period 1971-2000 at Freeport, Illinois)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 16	Apr. 29	May 11
2 years in 10 later than--	Apr. 12	Apr. 24	May 6
5 years in 10 later than--	Apr. 5	Apr. 14	Apr. 27
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 16	Oct. 1	Sept. 23
2 years in 10 earlier than--	Oct. 21	Oct. 6	Sept. 27
5 years in 10 earlier than--	Oct. 31	Oct. 16	Oct. 5

Table 3.--Growing Season
(Recorded in the period 1971-2000 at Freeport,
Illinois)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	191	165	142
8 years in 10	197	171	148
5 years in 10	208	184	160
2 years in 10	220	197	172
1 year in 10	226	204	178

Table 4.--Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series)

Soil name	Family or higher taxonomic class
Appleriver-----	Fine-silty, mixed, superactive, mesic Aquic HapludalFs
Argyle-----	Fine-loamy, mixed, superactive, mesic Mollic HapludalFs
Ashdale-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Ashdale-----	Fine-silty, mixed, superactive, mesic Mollic HapludalFs
*Assumption-----	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic HapludalFs
Atterberry-----	Fine-silty, mixed, superactive, mesic Udollic EndoaqualFs
Batavia-----	Fine-silty, mixed, superactive, mesic Mollic HapludalFs
Beaucoup-----	Fine-silty, mixed, superactive, mesic Fluvaquentic Endoaquolls
*Beaver creek-----	Loamy-skeletal, mixed, active, calcareous, mesic Typic Udifluvents
*Birkbeck-----	Fine-silty, mixed, superactive, mesic Typic HapludalFs
Camden-----	Fine-silty, mixed, superactive, mesic Typic HapludalFs
Casco-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Inceptic HapludalFs
Derinda-----	Fine, mixed, active, mesic Oxyaquic HapludalFs
Dickinson-----	Coarse-loamy, mixed, superactive, mesic Typic Hapludolls
*Dickinson-----	Coarse-loamy, mixed, superactive, mesic Dystric Eutrudepts
*Dodgeville-----	Fine-silty over clayey, mixed, superactive, mesic Mollic HapludalFs
Dorchester-----	Fine-silty, mixed, superactive, calcareous, mesic Typic Udifluvents
Drummer-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Dubuque-----	Fine-silty, mixed, superactive, mesic Typic HapludalFs
Durand-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
*Durand-----	Fine-loamy, mixed, superactive, mesic Mollic HapludalFs
Edgington-----	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Elburn-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Elco-----	Fine-silty, mixed, superactive, mesic Oxyaquic HapludalFs
Eleroy-----	Fine-silty, mixed, superactive, mesic Oxyaquic HapludalFs
Elizabeth-----	Loamy-skeletal, mixed, superactive, mesic Lithic Hapludolls
Fayette-----	Fine-silty, mixed, superactive, mesic Typic HapludalFs
Flagg-----	Fine-silty, mixed, superactive, mesic Typic HapludalFs
Fox-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic HapludalFs
Greenbush-----	Fine-silty, mixed, superactive, mesic Mollic HapludalFs
*Griswold-----	Fine-loamy, mixed, superactive, mesic Mollic HapludalFs
Harpster-----	Fine-silty, mixed, superactive, mesic Typic Calcicquolls
Harvard-----	Fine-silty, mixed, superactive, mesic Mollic HapludalFs
Hitt-----	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
*Hitt-----	Fine-loamy, mixed, superactive, mesic Mollic HapludalFs
Houghton-----	Euic, mesic Typic Haplosaprists
Huntsville-----	Fine-silty, mixed, superactive, mesic Cumulic Hapludolls
Keltner-----	Fine-silty, mixed, superactive, mesic Oxyaquic Argiudolls
*Keltner-----	Fine-silty, mixed, superactive, mesic Mollic Oxyaquic HapludalFs
Kendall-----	Fine-silty, mixed, superactive, mesic Aeric EndoaqualFs
Kidder-----	Fine-loamy, mixed, active, mesic Typic HapludalFs
Lamoille-----	Fine, mixed, superactive, mesic Typic HapludalFs
Lawson-----	Fine-silty, mixed, superactive, mesic Aquic Cumulic Hapludolls
Lena-----	Euic, mesic Typic Haplosaprists
Loran-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Massbach-----	Fine-silty, mixed, superactive, mesic Mollic HapludalFs
Millbrook-----	Fine-silty, mixed, superactive, mesic Udollic EndoaqualFs
Millington-----	Fine-loamy, mixed, superactive, calcareous, mesic Cumulic Endoaquolls
Muscataune-----	Fine-silty, mixed, superactive, mesic Aquic Argiudolls
Myrtle-----	Fine-silty, mixed, superactive, mesic Mollic HapludalFs
Nasset-----	Fine-silty, mixed, superactive, mesic Mollic HapludalFs
NewGlarus-----	Fine-silty over clayey, mixed, superactive, mesic Typic HapludalFs
Octagon-----	Fine-loamy, mixed, active, mesic Mollic Oxyaquic HapludalFs
Ogle-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Ogle-----	Fine-silty, mixed, superactive, mesic Mollic HapludalFs
Oneco-----	Fine-loamy, mixed, active, mesic Mollic HapludalFs
Orion-----	Coarse-silty, mixed, superactive, nonacid, mesic Aquic Udifluvents
Orthents-----	Fine-loamy, mixed, active, nonacid, mesic Typic Udorthents

Table 4.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Oscos-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Oscos-----	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Otter-----	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
Palsgrove-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Parkway-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Parkway-----	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Pecatonica-----	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Plano-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Plano-----	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Proctor-----	Fine-silty, mixed, superactive, mesic Typic Argiudolls
*Proctor-----	Fine-silty, mixed, superactive, mesic Mollic Hapludalfs
Radford-----	Fine-silty, mixed, superactive, mesic Fluvaquentic Hapludolls
Rodman-----	Sandy-skeletal, mixed, mesic Typic Hapludolls
Rozetta-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Sable-----	Fine-silty, mixed, superactive, mesic Typic Endoaquolls
Sawmill-----	Fine-silty, mixed, superactive, mesic Cumulic Endoaquolls
*Schapville-----	Fine, mixed, active, mesic Mollic Oxyaquic Hapludalfs
Senachwine-----	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Shullsburg-----	Fine, mixed, superactive, mesic Aquic Argiudolls
*Shullsburg-----	Fine, mixed, superactive, mesic Aquollic Hapludalfs
St. Charles-----	Fine-silty, mixed, superactive, mesic Typic Hapludalfs
Stronghurst-----	Fine-silty, mixed, superactive, mesic Aeris Endoaqualfs
Thorp-----	Fine-silty, mixed, superactive, mesic Argiaquic Argialbolls
Virgil-----	Fine-silty, mixed, superactive, mesic Udollic Endoaqualfs
*Warsaw-----	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Mollic Hapludalfs
Westville-----	Fine-loamy, mixed, superactive, mesic Typic Hapludalfs
Woodbine-----	Fine-loamy, mixed, active, mesic Typic Hapludalfs
Wyanet-----	Fine-loamy, mixed, active, mesic Typic Argiudolls
*Wyanet-----	Fine-loamy, mixed, active, mesic Mollic Hapludalfs

Table 5.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
21B	Pecatonica silt loam, 2 to 5 percent slopes-----	163	*
21C2	Pecatonica silt loam, 5 to 10 percent slopes, eroded-----	3,033	0.8
22C2	Westville silt loam, 5 to 10 percent slopes, eroded-----	398	0.1
22C3	Westville clay loam, 5 to 10 percent slopes, severely eroded-----	248	*
22D2	Westville silt loam, 10 to 18 percent slopes, eroded-----	109	*
29C2	Dubuque silt loam, 5 to 10 percent slopes, eroded-----	8,480	2.3
29D2	Dubuque silt loam, 10 to 18 percent slopes, eroded-----	3,417	0.9
40C2	Dodgeville silt loam, 5 to 10 percent slopes, eroded-----	12,848	3.6
40D2	Dodgeville silt loam, 10 to 18 percent slopes, eroded-----	490	0.1
51A	Muscatune silt loam, 0 to 2 percent slopes-----	6,320	1.7
51B	Muscatune silt loam, 2 to 5 percent slopes-----	1,606	0.4
61A	Atterberry silt loam, 0 to 2 percent slopes-----	1,805	0.5
61B	Atterberry silt loam, 2 to 5 percent slopes-----	762	0.2
67A	Harpster silty clay loam, 0 to 2 percent slopes-----	236	*
68A	Sable silty clay loam, 0 to 2 percent slopes-----	3,204	0.9
86A	Osco silt loam, 0 to 2 percent slopes-----	3,219	0.9
86B	Osco silt loam, 2 to 5 percent slopes-----	30,678	8.5
86C	Osco silt loam, 5 to 10 percent slopes-----	8,272	2.3
86C2	Osco silt loam, 5 to 10 percent slopes, eroded-----	5,226	1.4
87B	Dickinson sandy loam, 2 to 5 percent slopes-----	145	*
87C2	Dickinson sandy loam, 5 to 10 percent slopes, eroded-----	92	*
104A	Virgil silt loam, 0 to 2 percent slopes-----	2,833	0.8
104B	Virgil silt loam, 2 to 5 percent slopes-----	974	0.3
105A	Batavia silt loam, 0 to 2 percent slopes-----	826	0.2
105B	Batavia silt loam, 2 to 5 percent slopes-----	3,053	0.8
105C	Batavia silt loam, 5 to 10 percent slopes-----	931	0.3
119C2	Elco silt loam, 5 to 10 percent slopes, eroded-----	1,286	0.4
134B	Camden silt loam, 2 to 5 percent slopes-----	1,171	0.3
134C2	Camden silt loam, 5 to 10 percent slopes, eroded-----	4,909	1.4
134C3	Camden silty clay loam, 5 to 10 percent slopes, severely eroded-----	76	*
134D2	Camden silt loam, 10 to 18 percent slopes, eroded-----	435	0.1
148A	Proctor silt loam, 0 to 2 percent slopes-----	305	*
148B	Proctor silt loam, 2 to 5 percent slopes-----	1,035	0.3
148C2	Proctor silt loam, 5 to 10 percent slopes, eroded-----	1,975	0.5
152A	Drummer silty clay loam, 0 to 2 percent slopes-----	1,457	0.4
198A	Elburn silt loam, 0 to 2 percent slopes-----	2,033	0.6
198B	Elburn silt loam, 2 to 5 percent slopes-----	466	0.1
199A	Plano silt loam, 0 to 2 percent slopes-----	1,786	0.5
199B	Plano silt loam, 2 to 5 percent slopes-----	6,075	1.7
199C2	Plano silt loam, 5 to 10 percent slopes, eroded-----	3,562	1.0
206A	Thorp silt loam, 0 to 2 percent slopes-----	785	0.2
219A	Millbrook silt loam, 0 to 2 percent slopes-----	485	0.1
227B	Argyle silt loam, 2 to 5 percent slopes-----	174	*
227C2	Argyle silt loam, 5 to 10 percent slopes, eroded-----	2,856	0.8
233B	Birkbeck silt loam, 2 to 5 percent slopes-----	126	*
233C2	Birkbeck silt loam, 5 to 10 percent slopes, eroded-----	1,605	0.4
233D2	Birkbeck silt loam, 10 to 18 percent slopes, eroded-----	178	*
242A	Kendall silt loam, 0 to 2 percent slopes-----	781	0.2
242B	Kendall silt loam, 2 to 5 percent slopes-----	311	*
243A	St. Charles silt loam, 0 to 2 percent slopes-----	306	*
243B	St. Charles silt loam, 2 to 5 percent slopes-----	1,415	0.4
243C2	St. Charles silt loam, 5 to 10 percent slopes, eroded-----	1,495	0.4
259C2	Assumption silt loam, 5 to 10 percent slopes, eroded-----	1,101	0.3
272A	Edgington silt loam, 0 to 2 percent slopes-----	191	*
278A	Stronghurst silt loam, 0 to 2 percent slopes-----	226	*
279A	Rozetta silt loam, 0 to 2 percent slopes-----	512	0.1
279B	Rozetta silt loam, 2 to 5 percent slopes-----	5,212	1.4
280B	Fayette silt loam, 2 to 5 percent slopes-----	8,297	2.3
280C2	Fayette silt loam, 5 to 10 percent slopes, eroded-----	19,085	5.3
280C3	Fayette silty clay loam, 5 to 10 percent slopes, severely eroded-----	134	*
280D2	Fayette silt loam, 10 to 18 percent slopes, eroded-----	260	*
290C2	Warsaw silt loam, 5 to 10 percent slopes, eroded-----	785	0.2

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
344A	Harvard silt loam, 0 to 2 percent slopes-----	145	*
344B	Harvard silt loam, 2 to 5 percent slopes-----	926	0.3
344C2	Harvard silt loam, 5 to 10 percent slopes, eroded-----	1,040	0.3
361D3	Kidder clay loam, 6 to 12 percent slopes, severely eroded-----	355	*
361E2	Kidder loam, 12 to 18 percent slopes, eroded-----	477	0.1
363D2	Griswold loam, 6 to 12 percent slopes, eroded-----	890	0.2
403D2	Elizabeth silt loam, 10 to 18 percent slopes, eroded-----	2,212	0.6
403F2	Elizabeth silt loam, 18 to 35 percent slopes, eroded-----	3,376	0.9
410B	Woodbine silt loam, 2 to 5 percent slopes-----	1,138	0.3
410C2	Woodbine silt loam, 5 to 10 percent slopes, eroded-----	8,418	2.3
410C3	Woodbine silty clay loam, 5 to 10 percent slopes, severely eroded-----	2,008	0.6
410D2	Woodbine silt loam, 10 to 18 percent slopes, eroded-----	2,104	0.6
411B	Ashdale silt loam, 2 to 5 percent slopes-----	2,094	0.6
411C2	Ashdale silt loam, 5 to 10 percent slopes, eroded-----	6,152	1.7
412B	Ogle silt loam, 2 to 5 percent slopes-----	5,588	1.5
412C2	Ogle silt loam, 5 to 10 percent slopes, eroded-----	7,345	2.0
414B	Myrtle silt loam, 2 to 5 percent slopes-----	2,285	0.6
414C	Myrtle silt loam, 5 to 10 percent slopes-----	2,959	0.8
414C2	Myrtle silt loam, 5 to 10 percent slopes, eroded-----	934	0.3
416B	Durand silt loam, 2 to 5 percent slopes-----	192	*
416C2	Durand silt loam, 5 to 10 percent slopes, eroded-----	2,595	0.7
417C2	Derinda silt loam, 5 to 10 percent slopes, eroded-----	461	0.1
417C3	Derinda silty clay loam, 5 to 10 percent slopes, severely eroded-----	147	*
417D2	Derinda silt loam, 10 to 18 percent slopes, eroded-----	1,507	0.4
418C2	Schapville silt loam, 5 to 10 percent slopes, eroded-----	608	0.2
419B	Flagg silt loam, 2 to 5 percent slopes-----	1,672	0.5
419C2	Flagg silt loam, 5 to 10 percent slopes, eroded-----	3,518	1.0
429B	Palsgrove silt loam, 2 to 5 percent slopes-----	626	0.2
429C2	Palsgrove silt loam, 5 to 10 percent slopes, eroded-----	4,570	1.3
429D2	Palsgrove silt loam, 10 to 18 percent slopes, eroded-----	2,437	0.7
506B	Hitt silt loam, 2 to 5 percent slopes-----	2,643	0.7
506C2	Hitt silt loam, 5 to 10 percent slopes, eroded-----	11,321	3.1
546B	Keltner silt loam, 2 to 5 percent slopes-----	200	*
546C2	Keltner silt loam, 5 to 10 percent slopes, eroded-----	1,165	0.3
547B	Eleroy silt loam, 2 to 5 percent slopes-----	202	*
547C2	Eleroy silt loam, 5 to 10 percent slopes, eroded-----	2,519	0.7
572B	Loran silt loam, 2 to 5 percent slopes-----	176	*
572C	Loran silt loam, 5 to 10 percent slopes-----	205	*
618C2	Senachwine silt loam, 5 to 10 percent slopes, eroded-----	2,206	0.6
618C3	Senachwine clay loam, 5 to 10 percent slopes, severely eroded-----	214	*
618D2	Senachwine silt loam, 10 to 18 percent slopes, eroded-----	195	*
622B	Wyanet silt loam, 2 to 5 percent slopes-----	127	*
622C2	Wyanet silt loam, 5 to 10 percent slopes, eroded-----	843	0.2
656C2	Octagon silt loam, 4 to 6 percent slopes, eroded-----	447	0.1
656D2	Octagon silt loam, 6 to 12 percent slopes, eroded-----	584	0.2
675A	Greenbush silt loam, 0 to 2 percent slopes-----	637	0.2
675B	Greenbush silt loam, 2 to 5 percent slopes-----	14,360	4.0
675C	Greenbush silt loam, 5 to 10 percent slopes-----	7,164	2.0
675C2	Greenbush silt loam, 5 to 10 percent slopes, eroded-----	4,590	1.3
686B	Parkway silt loam, 2 to 5 percent slopes-----	1,173	0.3
686C2	Parkway silt loam, 5 to 10 percent slopes, eroded-----	3,980	1.1
731B	Nasset silt loam, 2 to 5 percent slopes-----	550	0.2
731C2	Nasset silt loam, 5 to 10 percent slopes, eroded-----	3,779	1.0
732B	Appleriver silt loam, 2 to 5 percent slopes-----	232	*
732C	Appleriver silt loam, 5 to 10 percent slopes-----	311	*
735C2	Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded-----	209	*
735D2	Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded-----	621	0.2
735E2	Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded-----	258	*
745B	Shullsburg silt loam, 2 to 5 percent slopes-----	283	*
745C2	Shullsburg silt loam, 5 to 10 percent slopes, eroded-----	834	0.2
752C2	Oneco silt loam, 5 to 10 percent slopes, eroded-----	5,267	1.5

See footnote at end of table.

Table 5.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
753B	Massbach silt loam, 2 to 5 percent slopes-----	300	*
753C2	Massbach silt loam, 5 to 10 percent slopes, eroded-----	1,680	0.5
802B	Orthents, loamy, undulating-----	459	0.1
864	Pits, quarries-----	522	0.1
865	Pits, gravel-----	248	*
905F	NewGlarus-Lamoille silt loams, 18 to 35 percent slopes-----	281	*
928D2	NewGlarus-Palsgrove silt loams, 10 to 18 percent slopes, eroded-----	555	0.2
1107A	Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded-----	2,110	0.6
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded-----	263	*
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded-----	267	*
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded-----	1,044	0.3
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded-----	133	*
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded-----	14,791	4.1
8076A	Otter silt loam, 0 to 2 percent slopes, occasionally flooded-----	447	0.1
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded-----	2,640	0.7
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded-----	152	*
8103A	Houghton muck, 0 to 2 percent slopes, occasionally flooded-----	163	*
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded-----	3,366	0.9
8210A	Lena muck, 0 to 2 percent slopes, occasionally flooded-----	143	*
8239A	Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded-----	6,423	1.8
8415A	Orion silt loam, 0 to 2 percent slopes, occasionally flooded-----	1,346	0.4
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded-----	13,883	3.8
8579A	Beavercreek silt loam, 0 to 2 percent slopes, occasionally flooded-----	564	0.2
M-W	Miscellaneous water-----	14	*
W	Water-----	1,263	0.3
	Total-----	361,390	100.0

* Less than 0.1 percent.

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland

(See text for a description of the limitations and hazards listed in this table. Only the soils that are generally available for use as cropland or pastureland are listed. Absence of an entry indicates that the soil is generally not suited to use as cropland or pastureland)

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
21B: Pecatonica-----	Crusting, water erosion	Low pH, water erosion
21C2: Pecatonica-----	Crusting, water erosion	Low pH, water erosion
22C2: Westville-----	Crusting, water erosion	Low pH, water erosion
22C3: Westville-----	Crusting, water erosion	Low pH, water erosion, low fertility
22D2: Westville-----	Crusting, water erosion	Low pH, water erosion
29C2: Dubuque-----	Crusting, water erosion, limited available water capacity, restricted permeability	Low pH, water erosion, limited available water capacity
29D2: Dubuque-----	Crusting, water erosion, limited available water capacity, restricted permeability	Low pH, water erosion, limited available water capacity
40C2: Dodgeville-----	Water erosion, limited available water capacity, restricted permeability	Low pH, water erosion, limited available water capacity
40D2: Dodgeville-----	Water erosion, limited available water capacity, restricted permeability	Low pH, water erosion, limited available water capacity
51A: Muscatune-----	Wetness	Wetness
51B: Muscatune-----	Wetness, water erosion	Wetness, low pH
61A: Atterberry-----	Wetness, crusting	Wetness, low pH
61B: Atterberry-----	Wetness, crusting, water erosion	Wetness, low pH, water erosion
67A: Harpster-----	Ponding, poor tilth, high pH, excess lime	Ponding, poor tilth, high pH, excess lime, frost heave
68A: Sable-----	Ponding	Ponding, frost heave

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
86A: Osc-----	No major limitations	Low pH
86B: Osc-----	Water erosion	Low pH
86C: Osc-----	Crusting, water erosion	Low pH, water erosion
86C2: Osc-----	Crusting, water erosion	Low pH, water erosion
87B: Dickinson-----	Limited available water capacity, excessive permeability	Low pH, limited available water capacity, excessive permeability
87C2: Dickinson-----	Water erosion, limited available water capacity, excessive permeability	Low pH, water erosion, limited available water capacity, excessive permeability
104A: Virgil-----	Wetness	Wetness, low pH
104B: Virgil-----	Wetness, water erosion	Wetness, low pH, water erosion
105A: Batavia-----	Crusting	Low pH
105B: Batavia-----	Crusting, water erosion	Low pH, water erosion
105C: Batavia-----	Crusting, water erosion	Low pH, water erosion
119C2: Elco-----	Crusting, water erosion, restricted permeability	Low pH, water erosion
134B: Camden-----	Crusting, water erosion	Low pH, water erosion
134C2: Camden-----	Crusting, water erosion	Low pH, water erosion
134C3: Camden-----	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility
134D2: Camden-----	Crusting, water erosion	Low pH, water erosion
148A: Proctor-----	No major limitations	Low pH
148B: Proctor-----	Water erosion	Low pH

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
148C2: Proctor-----	Water erosion	Low pH, water erosion
152A: Drummer-----	Ponding	Ponding, frost heave
198A: Elburn-----	Wetness	Wetness
198B: Elburn-----	Wetness, water erosion	Wetness
199A: Plano-----	No major limitations	Low pH
199B: Plano-----	Water erosion	Low pH
199C2: Plano-----	Water erosion	Low pH, water erosion
206A: Thorp-----	Ponding, restricted permeability	Ponding, low pH, frost heave
219A: Millbrook-----	Wetness	Wetness, low pH
227B: Argyle-----	Water erosion	Low pH, water erosion
227C2: Argyle-----	Crusting, water erosion	Low pH, water erosion
233B: Birkbeck-----	Crusting, water erosion	Water erosion
233C2: Birkbeck-----	Crusting, water erosion	Low pH, water erosion
233D2: Birkbeck-----	Crusting, water erosion	Low pH, water erosion
242A: Kendall-----	Wetness, crusting	Wetness, low pH
242B: Kendall-----	Wetness, crusting, water erosion	Wetness, low pH, water erosion
243A: St. Charles-----	Crusting	Low pH
243B: St. Charles-----	Crusting, water erosion	Low pH, water erosion
243C2: St. Charles-----	Crusting, water erosion	Low pH, water erosion
259C2: Assumption-----	Water erosion, restricted permeability	Low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
272A: Edgington-----	Ponding, restricted permeability	Ponding, low pH, frost heave
278A: Stronghurst-----	Wetness, crusting	Wetness, low pH
279A: Rozetta-----	Crusting	Low pH
279B: Rozetta-----	Crusting, water erosion	Low pH, water erosion
280B: Fayette-----	Crusting, water erosion	Low pH, water erosion
280C2: Fayette-----	Crusting, water erosion	Low pH, water erosion
280C3: Fayette-----	Poor tilth, crusting, water erosion	Poor tilth, low pH, water erosion, low fertility
280D2: Fayette-----	Crusting, water erosion	Low pH, water erosion
290C2: Warsaw-----	High pH, crusting, water erosion, limited available water capacity, excessive permeability	High pH, water erosion, limited available water capacity, excessive permeability
344A: Harvard-----	No major limitations	Low pH
344B: Harvard-----	Water erosion	Low pH, water erosion
344C2: Harvard-----	Crusting, water erosion	Low pH, water erosion
361D3: Kidder-----	High pH, crusting, water erosion	High pH, water erosion, low fertility
361E2: Kidder-----	High pH, crusting, water erosion	Equipment limitation, high pH, water erosion
363D2: Griswold-----	High pH, water erosion	High pH, water erosion
403D2: Elizabeth-----	---	---
403F2: Elizabeth-----	---	---
410B: Woodbine-----	Crusting, water erosion, restricted permeability	Low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
410C2: Woodbine-----	Crusting, water erosion	Low pH, water erosion
410C3: Woodbine-----	Crusting, water erosion, restricted permeability	Low pH, water erosion, low fertility
410D2: Woodbine-----	Crusting, water erosion	Low pH, water erosion
411B: Ashdale-----	Water erosion	No major limitations
411C2: Ashdale-----	Water erosion	Water erosion
412B: Ogle-----	Water erosion	Low pH
412C2: Ogle-----	Water erosion	Low pH, water erosion
414B: Myrtle-----	Crusting, water erosion	Low pH, water erosion
414C: Myrtle-----	Crusting, water erosion	Low pH, water erosion
414C2: Myrtle-----	Crusting, water erosion	Low pH, water erosion
416B: Durand-----	Water erosion	Low pH
416C2: Durand-----	Water erosion	Low pH, water erosion
417C2: Derinda-----	Crusting, water erosion, limited available water capacity, restricted permeability	Water erosion, limited available water capacity
417C3: Derinda-----	Crusting, water erosion, limited available water capacity, restricted permeability	Water erosion, limited available water capacity
417D2: Derinda-----	Crusting, water erosion, limited available water capacity, restricted permeability	Water erosion, limited available water capacity
418C2: Schapville-----	Water erosion, limited available water capacity, restricted permeability	Water erosion, limited available water capacity

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
419B: Flagg-----	Crusting, water erosion	Low pH, water erosion
419C2: Flagg-----	Crusting, water erosion	Low pH, water erosion
429B: Palsgrove-----	Crusting, water erosion	Low pH, water erosion
429C2: Palsgrove-----	Crusting, water erosion	Low pH, water erosion
429D2: Palsgrove-----	Crusting, water erosion	Low pH, water erosion
506B: Hitt-----	Water erosion, restricted permeability	Low pH, water erosion
506C2: Hitt-----	Crusting, water erosion, restricted permeability	Low pH, water erosion
546B: Keltner-----	Water erosion, restricted permeability	No major limitations
546C2: Keltner-----	Crusting, water erosion, restricted permeability	Water erosion
547B: Eleroy-----	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
547C2: Eleroy-----	Crusting, water erosion	Water erosion
572B: Loran-----	Wetness, water erosion	Wetness
572C: Loran-----	Wetness, water erosion, restricted permeability	Wetness, water erosion
618C2: Senachwine-----	High pH, excess lime, crusting, water erosion, limited available water capacity, restricted permeability	Low pH, high pH, water erosion, limited available water capacity, excess lime
618C3: Senachwine-----	Poor tilth, high pH, excess lime, crusting, water erosion, limited available water capacity, restricted permeability	Poor tilth, high pH, water erosion, limited available water capacity, excess lime

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
618D2: Senachwine-----	High pH, excess lime, crusting, water erosion, limited available water capacity, restricted permeability	Low pH, high pH, water erosion, limited available water capacity, excess lime
622B: Wyanet-----	High pH, water erosion, restricted permeability	High pH
622C2: Wyanet-----	High pH, crusting, water erosion, restricted permeability	High pH, water erosion
656C2: Octagon-----	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
656D2: Octagon-----	Root-restrictive layer, high pH, crusting, water erosion, restricted permeability	Root-restrictive layer, high pH, water erosion
675A: Greenbush-----	Crusting	Low pH
675B: Greenbush-----	Crusting, water erosion	Low pH, water erosion
675C: Greenbush-----	Crusting, water erosion	Low pH, water erosion
675C2: Greenbush-----	Crusting, water erosion	Low pH, water erosion
686B: Parkway-----	Water erosion	Low pH
686C2: Parkway-----	Crusting, water erosion	Low pH, water erosion
731B: Nasset-----	Water erosion	Low pH, water erosion
731C2: Nasset-----	Crusting, water erosion	Low pH, water erosion
732B: Appleriver-----	Wetness, crusting, water erosion, restricted permeability	Wetness, low pH, water erosion
732C: Appleriver-----	Wetness, crusting, water erosion, restricted permeability	Wetness, low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
735C2:		
Casco-----	High pH, water erosion, limited available water capacity, excessive permeability	High pH, water erosion, limited available water capacity, excessive permeability
Rodman-----	High pH, excess lime, limited available water capacity, excessive permeability	High pH, limited available water capacity, excess lime, excessive permeability
Fox-----	High pH, excess lime, crusting, water erosion, excessive permeability	Low pH, high pH, water erosion, excess lime, excessive permeability
735D2:		
Casco-----	High pH, water erosion, limited available water capacity, excessive permeability	High pH, water erosion, limited available water capacity, excessive permeability
Rodman-----	High pH, excess lime, limited available water capacity, excessive permeability	High pH, limited available water capacity, excess lime, excessive permeability
Fox-----	High pH, excess lime, crusting, water erosion, excessive permeability	Low pH, high pH, water erosion, excess lime, excessive permeability
735E2:		
Casco-----	---	Equipment limitation, high pH, water erosion, limited available water capacity, excessive permeability
Rodman-----	---	Equipment limitation, high pH, limited available water capacity, excess lime, excessive permeability
Fox-----	High pH, excess lime, crusting, water erosion, excessive permeability	Equipment limitation, low pH, high pH, water erosion, excess lime, excessive permeability
745B:		
Shullsburg-----	Wetness, water erosion, limited available water capacity, restricted permeability	Wetness, water erosion, limited available water capacity
745C2:		
Shullsburg-----	Wetness, water erosion, limited available water capacity, restricted permeability	Wetness, water erosion, limited available water capacity
752C2:		
Oneco-----	Water erosion, restricted permeability	Low pH, water erosion

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
753B: Massbach-----	Water erosion, restricted permeability	Low pH, water erosion
753C2: Massbach-----	Crusting, water erosion, restricted permeability	Water erosion
802B: Orthents, loamy-----	Crusting, water erosion, restricted permeability	Water erosion
905F: NewGlarus-----	---	Equipment limitation, water erosion
Lamoille-----	---	Equipment limitation, low pH, water erosion
928D2: NewGlarus-----	Crusting, water erosion, restricted permeability	Water erosion
Palsgrove-----	Crusting, water erosion	Low pH, water erosion
1107A: Sawmill-----	---	---
3074A: Radford-----	Flooding, wetness	Flooding, wetness
3107A: Sawmill-----	Flooding, ponding	Flooding, ponding, frost heave
3451A: Lawson-----	Flooding, wetness	Flooding, wetness
8070A: Beaucoup-----	Flooding, ponding, restricted permeability	Flooding, ponding, frost heave
8074A: Radford-----	Flooding, wetness	Flooding, wetness
8076A: Otter-----	Flooding, ponding	Flooding, ponding, frost heave
8077A: Huntsville-----	Flooding	Flooding
8082A: Millington-----	Flooding, ponding, high pH, excess lime	Flooding, ponding, high pH, excess lime, frost heave
8103A: Houghton-----	Flooding, ponding, low pH, wind erosion, subsidence	Flooding, ponding, low pH, wind erosion, frost heave

Table 6.--Limitations and Hazards Affecting Cropland and Pastureland--Continued

Map symbol and soil name	Limitations and hazards affecting cropland	Limitations and hazards affecting pastureland
8107A: Sawmill-----	Flooding, ponding	Flooding, ponding, frost heave
8210A: Lena-----	Flooding, ponding, low pH, excess lime, wind erosion	Flooding, ponding, low pH, wind erosion, excess lime, frost heave
8239A: Dorchester-----	Flooding, high pH, excess lime, crusting	Flooding, high pH, excess lime
8415A: Orion-----	Flooding, wetness	Flooding, wetness
8451A: Lawson-----	Flooding, wetness	Flooding, wetness
8579A: Beavercreek-----	Flooding, limited available water capacity	Flooding, limited available water capacity

Table 7.--Land Capability and Yields per Acre of Crops and Pasture

(Yields are those that can be expected under a high level of management. They are for nonirrigated areas.

Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
21B: Pecatonica-----	2e	138	44	53	68	4.00	5.9
21C2: Pecatonica-----	3e	129	41	50	64	3.79	5.5
22C2: Westville-----	3e	127	42	50	62	3.47	5.1
22C3: Westville-----	6e	105	35	42	51	3.50	5.8
22D2: Westville-----	3e	127	42	50	62	3.47	5.1
29C2: Dubuque-----	3e	106	35	45	56	3.30	4.7
29D2: Dubuque-----	4e	101	33	42	53	3.10	4.6
40C2: Dodgeville-----	3e	113	39	50	58	3.30	4.8
40D2: Dodgeville-----	4e	106	37	47	54	3.10	4.5
51A: Muscatune-----	1	180	57	68	94	5.42	8.0
51B: Muscatune-----	2e	178	56	67	93	5.37	7.9
61A: Atterberry-----	1	164	51	64	88	4.97	7.3
61B: Atterberry-----	2e	162	50	63	87	4.92	7.3
67A: Harpster-----	2w	164	52	61	80	4.86	7.2
68A: Sable-----	2w	173	57	67	89	5.20	7.7
86A: Osco-----	1	172	54	68	92	6.22	9.2
86B: Osco-----	2e	170	53	67	91	6.16	9.0
86C: Osco-----	3e	165	52	65	88	5.97	8.7

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
86C2: Oscro-----	3e	160	50	63	86	5.78	8.3
87B: Dickinson-----	2e	127	42	51	66	3.02	4.4
87C2: Dickinson-----	3e	119	39	47	62	2.84	4.1
104A: Virgil-----	1	164	50	63	87	4.97	7.3
104B: Virgil-----	2e	162	50	62	86	4.92	7.3
105A: Batavia-----	1	159	50	61	85	5.20	7.7
105B: Batavia-----	2e	157	50	60	84	5.20	7.6
105C: Batavia-----	3e	155	49	59	83	5.10	7.5
119C2: Elco-----	3e	126	42	49	63	3.57	5.2
134B: Camden-----	2e	148	46	57	77	4.25	6.3
134C2: Camden-----	3e	139	43	54	73	3.99	5.8
134C3: Camden-----	4e	128	40	50	67	3.70	5.3
134D2: Camden-----	3e	129	40	50	67	3.71	5.3
148A: Proctor-----	1	164	51	62	88	5.70	8.3
148B: Proctor-----	2e	162	50	62	87	5.64	8.3
148C2: Proctor-----	3e	154	48	59	83	5.36	7.7
152A: Drummer-----	2w	175	57	66	90	5.09	7.5
198A: Elburn-----	1	178	55	67	85	5.20	7.7
198B: Elburn-----	2e	176	54	66	84	5.10	7.6
199A: Plano-----	1	175	54	67	93	6.33	9.3

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
199B: Plano-----	2e	173	53	66	92	6.27	9.1
199C2: Plano-----	3e	163	50	62	87	5.89	8.6
206A: Thorp-----	2w	153	50	60	79	4.63	6.8
219A: Millbrook-----	1	159	50	62	84	4.75	7.0
227B: Argyle-----	2e	147	48	58	75	4.47	6.6
227C2: Argyle-----	3e	138	45	55	71	4.20	6.1
233B: Birkbeck-----	2e	149	47	59	78	4.58	6.8
233C2: Birkbeck-----	3e	140	44	56	74	4.31	6.3
233D2: Birkbeck-----	3e	131	41	52	69	4.03	5.8
242A: Kendall-----	2w	155	48	60	80	4.75	7.0
242B: Kendall-----	2e	153	48	59	79	4.70	6.9
243A: St. Charles-----	1	151	47	59	78	4.63	6.8
243B: St. Charles-----	2e	149	47	58	77	4.58	6.8
243C2: St. Charles-----	3e	140	44	55	73	4.31	6.3
259C2: Assumption-----	3e	137	44	55	70	3.99	5.8
272A: Edgington-----	2w	150	49	59	76	4.75	7.0
278A: Stronghurst-----	2w	154	48	60	78	4.75	7.0
279A: Rozetta-----	1	148	46	59	76	4.75	7.0
279B: Rozetta-----	2e	147	46	58	75	4.70	6.9
280B: Fayette-----	2e	149	47	59	76	4.70	6.9

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
280C2: Fayette-----	3e	140	44	56	72	4.42	6.4
280C3: Fayette-----	4e	129	40	52	66	4.09	5.8
280D2: Fayette-----	3e	131	41	52	67	4.11	5.9
290C2: Warsaw-----	3e	135	43	54	68	4.31	6.3
344A: Harvard-----	1	154	48	60	79	5.00	7.3
344B: Harvard-----	2e	152	48	59	78	5.00	7.3
344C2: Harvard-----	3e	143	45	56	73	4.70	6.7
361D3: Kidder-----	4e	103	34	42	48	2.60	3.8
361E2: Kidder-----	4e	104	34	43	49	2.70	3.8
363D2: Griswold-----	3e	130	43	53	63	4.00	5.7
403D2: Elizabeth-----	7s	---	---	---	---	2.10	3.9
403F2: Elizabeth-----	7s	---	---	---	---	---	---
410B: Woodbine-----	2e	118	39	50	60	---	---
410C2: Woodbine-----	3e	112	37	---	57	2.97	4.4
410C3: Woodbine-----	4e	104	34	44	53	2.75	4.1
410D2: Woodbine-----	3e	103	34	44	53	2.73	4.0
411B: Ashdale-----	2e	151	48	60	83	4.70	6.9
411C2: Ashdale-----	3e	142	45	57	78	4.42	6.4
412B: Ogle-----	2e	157	50	62	85	5.26	7.7
412C2: Ogle-----	3e	148	47	59	80	4.94	7.2

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
414B: Myrtle-----	2e	151	49	58	77	4.25	6.3
414C: Myrtle-----	3e	148	48	57	76	4.16	6.1
414C2: Myrtle-----	3e	144	46	55	73	4.00	6.0
416B: Durand-----	2e	151	50	60	78	4.30	7.1
416C2: Durand-----	3e	141	47	57	73	4.00	6.6
417C2: Derinda-----	3e	105	35	42	52	3.10	4.6
417C3: Derinda-----	6e	---	---	---	---	2.60	3.8
417D2: Derinda-----	6e	99	33	40	49	2.90	4.3
418C2: Schapville-----	3e	116	40	47	60	2.70	3.9
419B: Flagg-----	2e	145	47	56	74	4.47	6.7
419C2: Flagg-----	3e	136	44	53	70	4.20	6.1
429B: Palsgrove-----	2e	126	41	52	65	3.69	5.4
429C2: Palsgrove-----	3e	118	38	49	61	3.47	5.1
429D2: Palsgrove-----	3e	114	37	48	59	3.36	5.0
506B: Hitt-----	2e	141	47	56	74	4.14	6.1
506C2: Hitt-----	3e	132	44	53	70	3.89	5.7
546B: Keltner-----	2e	143	47	54	74	3.80	5.6
546C2: Keltner-----	3e	134	44	51	70	3.57	5.2
547B: Eleroy-----	2e	128	42	47	62	3.00	4.5
547C2: Eleroy-----	3e	120	39	44	59	2.84	4.1

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
572B: Loran-----	2e	146	48	57	75	4.37	6.4
572C: Loran-----	2e	143	47	56	74	3.40	6.3
618C2: Senachwine-----	3e	124	40	48	59	3.00	4.4
618C3: Senachwine-----	4e	115	37	45	55	2.75	4.1
618D2: Senachwine-----	4e	119	39	47	57	2.84	4.2
622B: Wyanet-----	2e	144	47	58	70	4.20	6.9
622C2: Wyanet-----	3e	135	44	55	66	3.90	6.4
656C2: Octagon-----	2e	134	44	55	66	4.20	6.3
656D2: Octagon-----	3e	132	43	53	64	4.10	6.0
675A: Greenbush-----	1	166	52	63	87	4.86	7.2
675B: Greenbush-----	2e	164	51	62	86	4.81	7.1
675C: Greenbush-----	3e	159	50	60	84	4.67	6.8
675C2: Greenbush-----	3e	161	50	61	84	4.52	6.7
686B: Parkway-----	2e	166	52	65	88	6.04	8.8
686C2: Parkway-----	3e	156	49	61	83	5.67	8.2
731B: Nasset-----	2e	136	44	54	72	4.00	5.9
731C2: Nasset-----	3e	128	41	51	68	3.80	5.6
732B: Appleriver-----	2e	127	41	51	63	3.60	5.9
732C: Appleriver-----	2e	124	40	50	62	3.95	5.8
735C2-----		112	37	43	51	2.80	4.0
Casco-----	3e						
Rodman-----	4s						
Fox-----	3e						

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
735D2----- Casco----- Rodman----- Fox-----	4e 4s 3e	102	33	40	46	2.47	3.7
735E2----- Casco----- Rodman----- Fox-----	6e 6s 4e	---	---	---	---	2.25	3.2
745B: Shullsburg-----	2e	133	46	57	68	4.00	5.9
745C2: Shullsburg-----	3e	122	42	53	63	3.70	5.3
752C2: Oneco-----	3e	124	41	52	65	3.50	5.2
753B: Massbach-----	2e	135	44	53	69	3.50	5.1
753C2: Massbach-----	3e	127	41	50	65	3.30	4.8
802B: Orthents, loamy----	2e	---	---	---	---	---	---
864. Pits, quarries							
865. Pits, gravel							
905F----- NewGlarus----- Lamoille-----	6e 6e	---	---	---	---	2.37	3.2
928D2----- NewGlarus----- Palsgrove-----	3e 3e	112	36	45	56	3.07	4.8
1107A: Sawmill-----	5w	---	---	---	---	---	---
3074A: Radford-----	3w	150	48	---	---	4.47	6.6
3107A: Sawmill-----	3w	153	50	---	---	4.70	6.9
3451A: Lawson-----	3w	154	50	---	---	4.68	6.9
8070A: Beaucoup-----	2w	159	53	62	81	4.86	7.2
8074A: Radford-----	2w	167	53	66	89	4.97	7.3

See footnote at end of table.

Table 7.--Land Capability and Yields per Acre of Crops and Pasture--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Winter wheat	Oats	Grass-legume hay	Grass-legume pasture
		Bu	Bu	Bu	Bu	Tons	AUM*
8076A: Otter-----	2w	168	55	64	84	5.10	7.5
8077A: Huntsville-----	1	174	55	67	90	6.00	10.0
8082A: Millington-----	2w	154	49	59	71	4.60	6.8
8103A: Houghton-----	3w	158	52	---	---	---	7.0
8107A: Sawmill-----	2w	170	54	64	87	5.20	7.7
8210A: Lena-----	3w	154	49	---	---	---	6.3
8239A: Dorchester-----	2w	161	47	58	79	5.09	7.5
8415A: Orion-----	2w	162	51	60	80	4.52	6.7
8451A: Lawson-----	2w	171	55	66	87	5.15	7.5
8579A: Beavercreek-----	6s	91	32	37	41	2.70	4.5

* Animal unit month: The amount of forage required to feed one mature cow, of approximately 1,000 pounds weight, with or without a calf, for 30 days.

Table 8.--Prime Farmland

(Only the soils considered prime farmland are listed. Urban or built-up areas of the soils listed are not considered prime farmland. If a soil is prime farmland only under certain conditions, the conditions are specified in parentheses after the soil name)

Map symbol	Soil name
21B	Pecatonica silt loam, 2 to 5 percent slopes
51A	Muscatune silt loam, 0 to 2 percent slopes
51B	Muscatune silt loam, 2 to 5 percent slopes
61A	Atterberry silt loam, 0 to 2 percent slopes (where drained)
61B	Atterberry silt loam, 2 to 5 percent slopes
67A	Harpster silty clay loam, 0 to 2 percent slopes (where drained)
68A	Sable silty clay loam, 0 to 2 percent slopes (where drained)
86A	Osco silt loam, 0 to 2 percent slopes
86B	Osco silt loam, 2 to 5 percent slopes
87B	Dickinson sandy loam, 2 to 5 percent slopes
87C2	Dickinson sandy loam, 5 to 10 percent slopes, eroded
104A	Virgil silt loam, 0 to 2 percent slopes (where drained)
104B	Virgil silt loam, 2 to 5 percent slopes
105A	Batavia silt loam, 0 to 2 percent slopes
105B	Batavia silt loam, 2 to 5 percent slopes
134B	Camden silt loam, 2 to 5 percent slopes
148A	Proctor silt loam, 0 to 2 percent slopes
148B	Proctor silt loam, 2 to 5 percent slopes
152A	Drummer silty clay loam, 0 to 2 percent slopes (where drained)
198A	Elburn silt loam, 0 to 2 percent slopes
198B	Elburn silt loam, 2 to 5 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B	Plano silt loam, 2 to 5 percent slopes
206A	Thorp silt loam, 0 to 2 percent slopes (where drained)
219A	Millbrook silt loam, 0 to 2 percent slopes (where drained)
227B	Argyle silt loam, 2 to 5 percent slopes
233B	Birkbeck silt loam, 2 to 5 percent slopes
242A	Kendall silt loam, 0 to 2 percent slopes (where drained)
242B	Kendall silt loam, 2 to 5 percent slopes
243A	St. Charles silt loam, 0 to 2 percent slopes
243B	St. Charles silt loam, 2 to 5 percent slopes
272A	Edgington silt loam, 0 to 2 percent slopes (where drained)
278A	Stronghurst silt loam, 0 to 2 percent slopes (where drained)
279A	Rozetta silt loam, 0 to 2 percent slopes
279B	Rozetta silt loam, 2 to 5 percent slopes
280B	Fayette silt loam, 2 to 5 percent slopes
344A	Harvard silt loam, 0 to 2 percent slopes
344B	Harvard silt loam, 2 to 5 percent slopes
410B	Woodbine silt loam, 2 to 5 percent slopes
411B	Ashdale silt loam, 2 to 5 percent slopes
412B	Ogle silt loam, 2 to 5 percent slopes
414B	Myrtle silt loam, 2 to 5 percent slopes
416B	Durand silt loam, 2 to 5 percent slopes
419B	Flagg silt loam, 2 to 5 percent slopes
429B	Palsgrove silt loam, 2 to 5 percent slopes
506B	Hitt silt loam, 2 to 5 percent slopes
546B	Keltner silt loam, 2 to 5 percent slopes
547B	Eleroy silt loam, 2 to 5 percent slopes
572B	Loran silt loam, 2 to 5 percent slopes
622B	Wyanet silt loam, 2 to 5 percent slopes
656C2	Octagon silt loam, 4 to 6 percent slopes, eroded
675A	Greenbush silt loam, 0 to 2 percent slopes
675B	Greenbush silt loam, 2 to 5 percent slopes
686B	Parkway silt loam, 2 to 5 percent slopes
731B	Nasset silt loam, 2 to 5 percent slopes
732B	Appleriver silt loam, 2 to 5 percent slopes
745B	Shullsburg silt loam, 2 to 5 percent slopes
753B	Massbach silt loam, 2 to 5 percent slopes

Table 8.--Prime Farmland--Continued

Map symbol	Soil name
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded (where drained and either protected from flooding or not frequently flooded during the growing season)
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded (where protected from flooding or not frequently flooded during the growing season)
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded
8076A	Otter silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded (where drained)
8239A	Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded
8415A	Orion silt loam, 0 to 2 percent slopes, occasionally flooded
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded

Table 9.--Hydric Soils

(Only those map units that have hydric components are listed. See text for a description of hydric qualities and definitions of the hydric criteria codes)

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria code
51A: Muscatune silt loam, 0 to 2 percent slopes	Muscatune Drummer Edgington Sable	Ground moraines Outwash plains Ground moraines Ground moraines	Not hydric Hydric Hydric Hydric	--- 2B3 2B3 2B3
51B: Muscatune silt loam, 2 to 5 percent slopes	Muscatune Sable Drummer	Ground moraines Ground moraines Outwash plains	Not hydric Hydric Hydric	--- 2B3 2B3
61A: Atterberry silt loam, 0 to 2 percent slopes	Atterberry Sable	Ground moraines Ground moraines	Not hydric Hydric	--- 2B3
61B: Atterberry silt loam, 2 to 5 percent slopes	Atterberry Sable	Ground moraines Ground moraines	Not hydric Hydric	--- 2B3
67A: Harpster silty clay loam, 0 to 2 percent slopes	Harpster	Outwash plains	Hydric	2B3
68A: Sable silty clay loam, 0 to 2 percent slopes	Sable	Ground moraines	Hydric	2B3
86A: Osco silt loam, 0 to 2 percent slopes	Osco Sable	Ground moraines Ground moraines	Not hydric Hydric	--- 2B3
86B: Osco silt loam, 2 to 5 percent slopes	Osco Sable	Ground moraines Ground moraines	Not hydric Hydric	--- 2B3
86C: Osco silt loam, 5 to 10 percent slopes	Osco Sable	Ground moraines Ground moraines	Not hydric Hydric	--- 2B3
86C2: Osco silt loam, 5 to 10 percent slopes, eroded	Osco Sable	Ground moraines Ground moraines	Not hydric Hydric	--- 2B3
104A: Virgil silt loam, 0 to 2 percent slopes	Virgil Thorp	Outwash plains Depressions	Not hydric Hydric	--- 2B3
105A: Batavia silt loam, 0 to 2 percent slopes	Batavia Drummer	Outwash plains Outwash plains	Not hydric Hydric	--- 2B3
105B: Batavia silt loam, 2 to 5 percent slopes	Batavia Drummer	Outwash plains Outwash plains	Not hydric Hydric	--- 2B3
134C2: Camden silt loam, 5 to 10 percent slopes, eroded	Camden Sawmill	Outwash plains Flood plains	Not hydric Hydric	--- 2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria code
148A: Proctor silt loam, 0 to 2 percent slopes	Proctor Drummer	Outwash plains Outwash plains	Not hydric Hydric	--- 2B3
148B: Proctor silt loam, 2 to 5 percent slopes	Proctor Drummer	Outwash plains Outwash plains	Not hydric Hydric	--- 2B3
148C2: Proctor silt loam, 5 to 10 percent slopes, eroded	Proctor Drummer	Outwash plains Outwash plains	Not hydric Hydric	--- 2B3
152A: Drummer silty clay loam, 0 to 2 percent slopes	Drummer	Outwash plains	Hydric	2B3
198A: Elburn silt loam, 0 to 2 percent slopes	Elburn Drummer Sable	Outwash plains Outwash plains Depressions	Not hydric Hydric Hydric	--- 2B3 2B3
198B: Elburn silt loam, 2 to 5 percent slopes	Elburn Sable	Outwash plains Depressions	Not hydric Hydric	--- 2B3
199A: Plano silt loam, 0 to 2 percent slopes	Plano Drummer Sable	Outwash plains Outwash plains Swales	Not hydric Hydric Hydric	--- 2B3 2B3
199B: Plano silt loam, 2 to 5 percent slopes	Plano Drummer Sable	Outwash plains Outwash plains Ground moraines	Not hydric Hydric Hydric	--- 2B3 2B3
199C2: Plano silt loam, 5 to 10 percent slopes, eroded	Plano Drummer Sable	Outwash plains, stream terraces Ground moraines, outwash plains Ground moraines	Not hydric Hydric Hydric	--- 2B3 2B3
206A: Thorp silt loam, 0 to 2 percent slopes	Thorp	Depressions	Hydric	2B3
219A: Millbrook silt loam, 0 to 2 percent slopes	Millbrook Drummer	Outwash plains Outwash plains	Not hydric Hydric	--- 2B3
242A: Kendall silt loam, 0 to 2 percent slopes	Kendall Drummer Sable	Outwash plains Swales Ground moraines	Not hydric Hydric Hydric	--- 2B3 2B3
242B: Kendall silt loam, 2 to 5 percent slopes	Kendall Drummer Sable	Outwash plains Swales Ground moraines	Not hydric Hydric Hydric	--- 2B3 2B3
243A: St. Charles silt loam, 0 to 2 percent slopes	St. Charles Drummer	Outwash plains, stream terraces Ground moraines, outwash plains	Not hydric Hydric	--- 2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria code
243B: St. Charles silt loam, 2 to 5 percent slopes	St. Charles	Outwash plains, stream terraces	Not hydric	---
	Drummer	Ground moraines, outwash plains	Hydric	2B3
	Sawmill	Flood plains	Hydric	2B3
243C2: St. Charles silt loam, 5 to 10 percent slopes, eroded	St. Charles	Outwash plains	Not hydric	---
	Drummer	Outwash plains	Hydric	2B3
272A: Edgington silt loam, 0 to 2 percent slopes	Edgington	Depressions	Hydric	2B3
278A: Stronghurst silt loam, 0 to 2 percent slopes	Stronghurst	Ground moraines	Not hydric	---
	Sable	Ground moraines	Hydric	2B3
279B: Rozetta silt loam, 2 to 5 percent slopes	Rozetta	Ground moraines	Not hydric	---
	Sable	Ground moraines	Hydric	2B3
290C2: Warsaw silt loam, 5 to 10 percent slopes, eroded	Warsaw	Outwash plains	Not hydric	---
	Drummer	Outwash plains	Hydric	2B3
344B: Harvard silt loam, 2 to 5 percent slopes	Harvard	Outwash plains	Not hydric	---
	Drummer	Outwash plains	Hydric	2B3
344C2: Harvard silt loam, 5 to 10 percent slopes, eroded	Harvard	Outwash plains	Not hydric	---
	Drummer	Outwash plains	Hydric	2B3
546C2: Keltner silt loam, 5 to 10 percent slopes, eroded	Keltner	Valley sides	Not hydric	---
	Sawmill	Flood plains	Hydric	2B3
572B: Loran silt loam, 2 to 5 percent slopes	Loran	Ground moraines	Not hydric	---
	Drummer	Outwash plains	Hydric	2B3
622B: Wyanet silt loam, 2 to 5 percent slopes	Wyanet	Ground moraines	Not hydric	---
	Sable	Ground moraines	Hydric	2B3
	Drummer	Outwash plains	Hydric	2B3
622C2: Wyanet silt loam, 5 to 10 percent slopes, eroded	Wyanet	Ground moraines	Not hydric	---
	Sable	Ground moraines	Hydric	2B3
	Drummer	Outwash plains	Hydric	2B3
675A: Greenbush silt loam, 0 to 2 percent slopes	Greenbush	Ground moraines	Not hydric	---
	Sable	Ground moraines	Hydric	2B3
675B: Greenbush silt loam, 2 to 5 percent slopes	Greenbush	Ground moraines	Not hydric	---
	Sable	Ground moraines	Hydric	2B3
686B: Parkway silt loam, 2 to 5 percent slopes	Parkway	Ground moraines	Not hydric	---
	Drummer	Outwash plains	Hydric	2B3

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria code
732B: Appleriver silt loam, 2 to 5 percent slopes	Appleriver Sable	Stream terraces Ground moraines	Not hydric Hydric	--- 2B3
732C: Appleriver silt loam, 5 to 10 percent slopes	Appleriver Sable	Stream terraces Ground moraines	Not hydric Hydric	--- 2B3
745B: Shullsburg silt loam, 2 to 5 percent slopes	Shullsburg Sable	Hillslopes Ground moraines	Not hydric Hydric	--- 2B3
745C2: Shullsburg silt loam, 5 to 10 percent slopes, eroded	Shullsburg Sable	Hillslopes Ground moraines	Not hydric Hydric	--- 2B3
1107A: Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded	Sawmill	Flood plains	Hydric	2B3,3
3074A: Radford silt loam, 0 to 2 percent slopes, frequently flooded	Radford Sawmill	Flood plains Flood plains	Not hydric Hydric	--- 2B3
3107A: Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded	Sawmill	Flood plains	Hydric	2B3
3451A: Lawson silt loam, 0 to 2 percent slopes, frequently flooded	Lawson Otter Sawmill	Flood plains Flood plains Flood plains	Not hydric Hydric Hydric	--- 2B3 2B3
8070A: Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded	Beaucoup	Flood plains	Hydric	2B3
8074A: Radford silt loam, 0 to 2 percent slopes, occasionally flooded	Radford Sawmill	Flood plains Swales	Not hydric Hydric	--- 2B3
8076A: Otter silt loam, 0 to 2 percent slopes, occasionally flooded	Otter	Flood plains	Hydric	2B3
8077A: Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded	Huntsville Beaucoup	Flood plains Depressions	Not hydric Hydric	--- 2B3
8082A: Millington silt loam, 0 to 2 percent slopes, occasionally flooded	Millington	Flood plains	Hydric	2B3
8103A: Houghton muck, 0 to 2 percent slopes, occasionally flooded	Houghton	Flood plains	Hydric	1

Table 9.--Hydric Soils--Continued

Map symbol and map unit name	Component	Local landform	Hydric status	Hydric criteria code
8107A: Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded	Sawmill	Flood plains	Hydric	2B3
8210A: Lena muck, 0 to 2 percent slopes, occasionally flooded	Lena	Flood plains	Hydric	2B3
8239A: Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded	Dorchester Sawmill	Flood plains Flood plains	Not hydric Hydric	--- 2B3
8415A: Orion silt loam, 0 to 2 percent slopes, occasionally flooded	Orion Beaucoup Sawmill	Flood plains Flood plains Flood plains, swales	Not hydric Hydric Hydric	--- 2B3 2B3
8451A: Lawson silt loam, 0 to 2 percent slopes, occasionally flooded	Lawson Beaucoup Otter	Flood plains Flood plains Swales	Not hydric Hydric Hydric	--- 2B3 2B3

Table 10.--Windbreaks and Environmental Plantings

(Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
21B: Pecatonica-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
21C2: Pecatonica-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
22C2: Westville-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
22C3: Westville-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
22D2: Westville-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
29C2: Dubuque-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
29D2: Dubuque-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
40C2: Dodgeville-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
40D2: Dodgeville-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
51A: Muscatune-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
51B: Muscatune-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
61A: Atterberry-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
61B: Atterberry-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
67A: Harpster-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
68A: Sable-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
86A: Osc-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
86B: Osc-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
86C: Osc-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
86C2: Osc-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
87B: Dickinson-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
87C2: Dickinson-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
104A: Virgil-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
104B: Virgil-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
105A: Batavia-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
105B: Batavia-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
105C: Batavia-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
119C2: Elco-----	American cranberrybush, American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, gray dogwood, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce-----	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
134B: Camden-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
134C2: Camden-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
134C3: Camden-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
134D2: Camden-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
148A: Proctor-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
148B: Proctor-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
148C2: Proctor-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
152A: Drummer-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
198A: Elburn-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
198B: Elburn-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
199A: Plano-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
199B: Plano-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
199C2: Plano-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
206A: Thorp-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
219A: Millbrook-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
227B: Argyle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
227C2: Argyle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
233B: Birkbeck-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
233C2: Birkbeck-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
233D2: Birkbeck-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
242A: Kendall-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
242B: Kendall-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
243A: St. Charles-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
243B: St. Charles-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
243C2: St. Charles-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
259C2: Assumption-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
272A: Edgington-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
278A: Stronghurst-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
279A: Rozetta-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
279B: Rozetta-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
280B: Fayette-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
280C2: Fayette-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
280C3: Fayette-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
280D2: Fayette-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
290C2: Warsaw-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
344A: Harvard-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
344B: Harvard-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
344C2: Harvard-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
361D3: Kidder-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
361E2: Kidder-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
363D2: Griswold-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak	Carolina poplar, eastern cottonwood, eastern white pine
403D2: Elizabeth-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---
403F2: Elizabeth-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
410B: Woodbine-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
410C2: Woodbine-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
410C3: Woodbine-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
410D2: Woodbine-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
411B: Ashdale-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
411C2: Ashdale-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
412B: Ogle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
412C2: Ogle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
414B: Myrtle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
414C: Myrtle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
414C2: Myrtle-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
416B: Durand-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
416C2: Durand-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
417C2: Derinda-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce-----	Carolina poplar
417C3: Derinda-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce-----	Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
417D2: Derinda-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce-----	Carolina poplar
418C2: Schapville-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
419B: Flagg-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
419C2: Flagg-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
429B: Palsgrove-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
429C2: Palsgrove-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
429D2: Palsgrove-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
506B: Hitt-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
506C2: Hitt-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
546B: Keltner-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
546C2: Keltner-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
547B: Eleroy-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
547C2: Eleroy-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
572B: Loran-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
572C: Loran-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
618C2: Senachwine-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
618C3: Senachwine-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
618D2: Senachwine-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
622B: Wyanet-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
622C2: Wyanet-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
656C2: Octagon-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
656D2: Octagon-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
675A: Greenbush-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
675B: Greenbush-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
675C: Greenbush-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
675C2: Greenbush-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
686B: Parkway-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
686C2: Parkway-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
731B: Nasset-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
731C2: Nasset-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
732B: Appleriver-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak
732C: Appleriver-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
735C2:					
Casco-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
Rodman-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---
Fox-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
735D2:					
Casco-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
Rodman-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
735D2: Fox-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
735E2: Casco-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---
Rodman-----	American plum, black chokeberry, blackhaw, common juniper, gray dogwood, mapleleaf viburnum	Cockspur hawthorn, common serviceberry, eastern redcedar, nannyberry, prairie crabapple	Bur oak, chinkapin oak, thornless honeylocust	---	---
Fox-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
745B: Shullsburg-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce-----	Carolina poplar
745C2: Shullsburg-----	American cranberrybush, American hazelnut, black chokeberry, common juniper, coralberry, gray dogwood, mapleleaf viburnum, silky dogwood	American plum, American witchhazel, Washington hawthorn, blackhaw, common chokecherry, common serviceberry, nannyberry, prairie crabapple, roughleaf dogwood, staghorn sumac	Virginia pine, arborvitae, black oak, blackgum, bur oak, chinkapin oak, common hackberry, eastern redcedar	Norway spruce-----	Carolina poplar
752C2: Oneco-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
753B: Massbach-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
753C2: Massbach-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
802B. Orthents, loamy					
864. Pits, quarries					
865. Pits, gravel					
905F: NewGlarus-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar-----	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
905F: Lamoille-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar----	---
928D2: NewGlarus-----	American cranberrybush, American hazelnut, black chokeberry, common chokecherry, common elderberry, common juniper, coralberry, mapleleaf viburnum, silky dogwood	American plum, bur oak, chinkapin oak, common serviceberry, eastern redcedar, nannyberry, prairie crabapple, roughleaf dogwood, smooth sumac	Black oak, common hackberry, eastern white pine	Carolina poplar----	---
Palsgrove-----	American hazelnut, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, coralberry, mapleleaf viburnum, redosier dogwood, silky dogwood	American plum, American witchhazel, blackhaw, common chokecherry, common serviceberry, prairie crabapple, roughleaf dogwood, smooth sumac, southern arrowwood	Washington hawthorn, arborvitae, blue spruce, common persimmon, eastern redcedar, nannyberry, pecan, white oak	Douglas fir, Norway spruce, black walnut, blackgum, common hackberry, northern red oak, pin oak, tuliptree	Carolina poplar, eastern cottonwood, eastern white pine
1107A: Sawmill-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
3074A: Radford-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3107A: Sawmill-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
3451A: Lawson-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8070A: Beaucoup-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8074A: Radford-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8076A: Otter-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8077A: Huntsville-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8082A: Millington-----	Common winterberry, gray dogwood, redosier dogwood	Common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	Arborvitae, bur oak, common hackberry, eastern redcedar, green hawthorn	Carolina poplar, eastern cottonwood	---
8103A: Houghton-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
8107A: Sawmill-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Cockspur hawthorn, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, blackgum, common hackberry, green hawthorn, northern white-cedar, shingle oak	Red maple, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8210A: Lena-----	American cranberrybush, black chokeberry, buttonbush, common elderberry, common ninebark, common winterberry, gray dogwood, highbush blueberry, northern spicebush, redosier dogwood, silky dogwood	Common serviceberry, hazel alder, nannyberry, roughleaf dogwood	Arborvitae, common persimmon	Pin oak, river birch, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood
8239A: Dorchester-----	American hazelnut, common winterberry, gray dogwood, redosier dogwood	Blackhaw, common chokecherry, common pawpaw, nannyberry, roughleaf dogwood, silky dogwood	American sycamore, arborvitae, blue spruce, bur oak, chinkapin oak, common hackberry, eastern redcedar	Carolina poplar, eastern cottonwood	---
8415A: Orion-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak
8451A: Lawson-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Trees having predicted 20-year average height, in feet, of--				
	<8	8-15	16-25	26-35	>35
8579A: Beavercreek-----	American cranberrybush, Canada yew, black chokeberry, common elderberry, common juniper, common ninebark, common winterberry, northern spicebush, redosier dogwood, silky dogwood	Blackhaw, cockspur hawthorn, common pawpaw, common serviceberry, prairie crabapple, roughleaf dogwood, rusty blackhaw, southern arrowwood, witchhazel	Austrian pine, Douglas fir, arborvitae, blue spruce, common persimmon, eastern redcedar, green hawthorn, nannyberry, pecan, shingle oak	Norway spruce, blackgum, common hackberry, red maple, swamp white oak, sweetgum	Carolina poplar, eastern cottonwood, pin oak

Table 11.--Forestland Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
21C2: Pecatonica-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
22C2: Westville-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
22C3: Westville-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
22D2: Westville-----	Moderate Low strength	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
29C2: Dubuque-----	Moderate Low strength Restrictive layer	0.50 0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
29D2: Dubuque-----	Moderate Restrictive layer Low strength	0.50 0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
40C2: Dodgeville-----	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
40D2: Dodgeville-----	Moderate Low strength	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
51A: Muscatune-----	Moderate Low strength	0.50	Moderately suited Low strength Wetness	0.50 0.50	Severe Low strength	1.00
51B: Muscatune-----	Moderate Low strength	0.50	Moderately suited Low strength Wetness	0.50 0.50	Severe Low strength	1.00

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
61A: Atterberry-----	Moderate Low strength	0.50	Moderately suited Wetness Low strength	0.50 0.50	Severe Low strength	1.00
61B: Atterberry-----	Moderate Low strength	0.50	Moderately suited Wetness Low strength	0.50 0.50	Severe Low strength	1.00
67A: Harpster-----	Moderate Low strength	0.50	Poorly suited Wetness Ponding Low strength	1.00 0.50 0.50	Severe Low strength	1.00
68A: Sable-----	Moderate Low strength	0.50	Poorly suited Ponding Wetness Low strength	1.00 1.00 0.50	Severe Low strength	1.00
86A: Osco-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
86B: Osco-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
86C: Osco-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
86C2: Osco-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
87B: Dickinson-----	Slight		Well suited		Moderate Low strength	0.50
87C2: Dickinson-----	Moderate Sandiness	0.50	Moderately suited Sandiness Slope	0.50 0.50	Moderate Low strength	0.50
104A: Virgil-----	Moderate Low strength	0.50	Moderately suited Wetness Low strength	0.50 0.50	Severe Low strength	1.00
104B: Virgil-----	Moderate Low strength	0.50	Moderately suited Wetness Low strength	0.50 0.50	Severe Low strength	1.00

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings	Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value
105A: Batavia-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength
105B: Batavia-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength
105C: Batavia-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength
119C2: Elco-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength
134B: Camden-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength
134C2: Camden-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength
134C3: Camden-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength
134D2: Camden-----	Moderate Low strength	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength
148A: Proctor-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength
148B: Proctor-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength
148C2: Proctor-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength
152A: Drummer-----	Moderate Low strength	0.50	Poorly suited Wetness Ponding Low strength	1.00 0.50 0.50	Severe Low strength
198A: Elburn-----	Moderate Low strength	0.50	Moderately suited Low strength Wetness	0.50 0.50	Severe Low strength

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings	Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value
198B: Elburn-----	Moderate Low strength	0.50	Moderately suited Low strength Wetness	0.50 0.50	Severe Low strength 1.00
199A: Plano-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength 1.00
199B: Plano-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength 1.00
199C2: Plano-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength 1.00
206A: Thorp-----	Moderate Low strength	0.50	Poorly suited Ponding Wetness Low strength	1.00 1.00 0.50	Severe Low strength 1.00
219A: Millbrook-----	Moderate Low strength	0.50	Moderately suited Wetness Low strength	0.50 0.50	Severe Low strength 1.00
227B: Argyle-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength 1.00
227C2: Argyle-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength 1.00
233B: Birkbeck-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength 1.00
233C2: Birkbeck-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength 1.00
233D2: Birkbeck-----	Moderate Low strength	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength 1.00
242A: Kendall-----	Moderate Low strength	0.50	Moderately suited Wetness Low strength	0.50 0.50	Severe Low strength 1.00

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
242B: Kendall-----	Moderate Low strength	0.50	Moderately suited Wetness Low strength	0.50 0.50	Severe Low strength	1.00
243A: St. Charles-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
243B: St. Charles-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
243C2: St. Charles-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
259C2: Assumption-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
272A: Edgington-----	Moderate Low strength	0.50	Poorly suited Ponding Wetness Low strength	1.00 1.00 0.50	Severe Low strength	1.00
278A: Stronghurst-----	Moderate Low strength	0.50	Moderately suited Wetness Low strength	0.50 0.50	Severe Low strength	1.00
279A: Rozetta-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
279B: Rozetta-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
280B: Fayette-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
280C2: Fayette-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
280C3: Fayette-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
280D2: Fayette-----	Moderate Low strength	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
290C2: Warsaw-----	Moderate		Moderately suited		Severe	
	Low strength	0.50	Sandiness	0.50	Low strength	1.00
	Sandiness	0.50	Low strength	0.50		
			Slope	0.50		
344A: Harvard-----	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
344B: Harvard-----	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
344C2: Harvard-----	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
			Slope	0.50		
361D3: Kidder-----	Moderate		Moderately suited		Severe	
	Low strength	0.50	Slope	0.50	Low strength	1.00
			Low strength	0.50		
361E2: Kidder-----	Moderate		Poorly suited		Severe	
	Slope	0.50	Slope	1.00	Low strength	1.00
			Low strength	0.50		
363D2: Griswold-----	Moderate		Moderately suited		Severe	
	Low strength	0.50	Slope	0.50	Low strength	1.00
			Low strength	0.50		
403D2: Elizabeth-----	Severe		Poorly suited		Severe	
	Restrictive layer	1.00	Slope	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
403F2: Elizabeth-----	Severe		Poorly suited		Severe	
	Restrictive layer	1.00	Slope	1.00	Low strength	1.00
	Slope	0.50	Low strength	0.50		
410B: Woodbine-----	Slight		Moderately suited		Severe	
			Low strength	0.50	Low strength	1.00
410C2: Woodbine-----	Moderate		Moderately suited		Severe	
	Low strength	0.50	Low strength	0.50	Low strength	1.00
	Stickiness/slope	0.50	Slope	0.50		
410C3: Woodbine-----	Moderate		Moderately suited		Severe	
	Low strength	0.50	Slope	0.50	Low strength	1.00
			Low strength	0.50		

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
410D2: Woodbine-----	Moderate Stickiness/slope Low strength	0.50 0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
411B: Ashdale-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
411C2: Ashdale-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
412B: Ogle-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
412C2: Ogle-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
414B: Myrtle-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
414C: Myrtle-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
414C2: Myrtle-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
416B: Durand-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
416C2: Durand-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
417C2: Derinda-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
417C3: Derinda-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
417D2: Derinda-----	Moderate Low strength	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
418C2: Schapville-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
419B: Flagg-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
419C2: Flagg-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
429B: Palsgrove-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
429C2: Palsgrove-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
429D2: Palsgrove-----	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
506B: Hitt-----	Moderate Stickiness/slope Low strength	0.50 0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
506C2: Hitt-----	Moderate Stickiness/slope Low strength	0.50 0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
546B: Keltner-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
546C2: Keltner-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
547B: Eleroy-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
547C2: Eleroy-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
572B: Loran-----	Moderate Low strength	0.50	Moderately suited Low strength Wetness	0.50 0.50	Severe Low strength	1.00

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
572C: Loran-----	Moderate Low strength	0.50	Moderately suited Low strength Slope Wetness	0.50 0.50 0.50	Severe Low strength	1.00
618C2: Senachwine-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
618C3: Senachwine-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
618D2: Senachwine-----	Moderate Low strength	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength	1.00
622B: Wyanet-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
622C2: Wyanet-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
656C2: Octagon-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
656D2: Octagon-----	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength	1.00
675A: Greenbush-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
675B: Greenbush-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00
675C: Greenbush-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
675C2: Greenbush-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength	1.00
686B: Parkway-----	Moderate Low strength	0.50	Moderately suited Low strength	0.50	Severe Low strength	1.00

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings	Suitability for log landings		Soil rutting hazard	
		Rating class and limiting features	Value	Rating class and limiting features	Value
686C2: Parkway-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength 1.00
731B: Nasset-----	Moderate Stickiness/slope Low strength	0.50 0.50	Moderately suited Low strength	0.50	Severe Low strength 1.00
731C2: Nasset-----	Moderate Low strength	0.50	Moderately suited Low strength Slope	0.50 0.50	Severe Low strength 1.00
732B: Appleriver-----	Moderate Low strength	0.50	Moderately suited Low strength Wetness	0.50 0.50	Severe Low strength 1.00
732C: Appleriver-----	Moderate Low strength	0.50	Moderately suited Low strength Slope Wetness	0.50 0.50 0.50	Severe Low strength 1.00
735C2: Casco-----	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength 1.00
Rodman-----	Slight		Moderately suited Slope	0.50	Moderate Low strength 0.50
Fox-----	Slight		Moderately suited Slope Low strength	0.50 0.50	Severe Low strength 1.00
735D2: Casco-----	Moderate Low strength	0.50	Moderately suited Slope Low strength	0.50 0.50	Severe Low strength 1.00
Rodman-----	Slight		Moderately suited Slope	0.50	Moderate Low strength 0.50
Fox-----	Slight		Moderately suited Slope Low strength	0.50 0.50	Severe Low strength 1.00
735E2: Casco-----	Moderate Slope	0.50	Poorly suited Slope Low strength	1.00 0.50	Severe Low strength 1.00
Rodman-----	Moderate Slope	0.50	Poorly suited Slope	1.00	Moderate Low strength 0.50

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
735E2: Fox-----	Moderate Slope Sandiness	 0.50 0.50	Poorly suited Slope Sandiness Low strength	 1.00 0.50 0.50	Severe Low strength	 1.00
745B: Shullsburg-----	Moderate Low strength	 0.50	Moderately suited Low strength Wetness	 0.50 0.50	Severe Low strength	 1.00
745C2: Shullsburg-----	Moderate Low strength	 0.50	Moderately suited Low strength Slope Wetness	 0.50 0.50 0.50	Severe Low strength	 1.00
752C2: Oneco-----	Moderate Low strength	 0.50	Moderately suited Low strength Slope	 0.50 0.50	Severe Low strength	 1.00
753B: Massbach-----	Moderate Low strength	 0.50	Moderately suited Low strength	 0.50	Severe Low strength	 1.00
753C2: Massbach-----	Moderate Low strength	 0.50	Moderately suited Low strength Slope	 0.50 0.50	Severe Low strength	 1.00
802B: Orthents, loamy----	Moderate Low strength	 0.50	Moderately suited Low strength	 0.50	Severe Low strength	 1.00
864. Pits, quarries						
866. Pits, gravel						
905F: NewGlarus-----	Moderate Slope Restrictive layer	 0.50 0.50	Poorly suited Slope Low strength	 1.00 0.50	Severe Low strength	 1.00
Lamoille-----	Moderate Slope	 0.50	Poorly suited Slope Low strength	 1.00 0.50	Severe Low strength	 1.00
928D2: NewGlarus-----	Moderate Restrictive layer Low strength	 0.50 0.50	Poorly suited Slope Low strength	 1.00 0.50	Severe Low strength	 1.00
Palsgrove-----	Moderate Low strength	 0.50	Poorly suited Slope Low strength	 1.00 0.50	Severe Low strength	 1.00

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1107A: Sawmill-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
3074A: Radford-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
3107A: Sawmill-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
3451A: Lawson-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
8070A: Beaucoup-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
8074A: Radford-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
			Wetness	0.50		
8076A: Otter-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		
8077A: Huntsville-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Flooding	1.00	Low strength	1.00
	Low strength	0.50	Low strength	0.50		
8082A: Millington-----	Severe		Poorly suited		Severe	
	Flooding	1.00	Ponding	1.00	Low strength	1.00
	Low strength	0.50	Flooding	1.00		
			Wetness	1.00		
			Low strength	0.50		

Table 11.--Forestland Management--Continued

Map symbol and soil name	Limitations affecting construction of haul roads and log landings		Suitability for log landings		Soil rutting hazard	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8103A: Houghton-----	Severe Flooding	1.00	Poorly suited Ponding Flooding Low strength Wetness	1.00 1.00 1.00 1.00	Severe Low strength	1.00
8107A: Sawmill-----	Severe Flooding Low strength	1.00 0.50	Poorly suited Ponding Flooding Wetness Low strength	1.00 1.00 1.00 0.50	Severe Low strength	1.00
8210A: Lena-----	Severe Flooding	1.00	Poorly suited Ponding Flooding Low strength Wetness	1.00 1.00 1.00 1.00	Severe Low strength	1.00
8239A: Dorchester-----	Severe Flooding Low strength	1.00 0.50	Poorly suited Flooding Low strength	1.00 1.00 0.50	Severe Low strength	1.00
8415A: Orion-----	Severe Flooding Low strength	1.00 0.50	Poorly suited Flooding Low strength Wetness	1.00 0.50 0.50	Severe Low strength	1.00
8451A: Lawson-----	Severe Flooding Low strength	1.00 0.50	Poorly suited Flooding Low strength Wetness	1.00 0.50 0.50	Severe Low strength	1.00
8579A: Beavercreek-----	Severe Flooding Low strength	1.00 0.50	Poorly suited Flooding Low strength	1.00 1.00 0.50	Severe Low strength	1.00

Table 12.--Forestland Productivity

(Only the soils commonly used for production of commercial trees are listed)

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
21B:				
Pecatonica-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	White oak-----	80	57	
21C2:				
Pecatonica-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	White oak-----	80	57	
22C2:				
Westville-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	White oak-----	80	57	
22C3:				
Westville-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	White oak-----	80	57	
22D2:				
Westville-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	White oak-----	80	57	
29C2:				
Dubuque-----	Northern red oak-----	65	43	Black walnut, eastern white pine, red pine.
	White oak-----	65	43	
29D2:				
Dubuque-----	Northern red oak-----	65	43	Black oak, common hackberry, eastern white pine.
	White oak-----	65	43	
61A:				
Atterberry-----	Bur oak-----	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Green ash-----	---	---	
	Northern red oak-----	70	57	
	White oak-----	70	57	
61B:				
Atterberry-----	Bur oak-----	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Green ash-----	---	---	
	Northern red oak-----	70	57	
	White oak-----	70	57	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
67A: Harpster-----	---	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
86C: Osco-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
87B: Dickinson-----	---	---	---	Black oak, common hackberry, eastern white pine.
87C2: Dickinson-----	---	---	---	Black oak, common hackberry, eastern white pine.
104A: Virgil-----	Black walnut----- Northern red oak----- White oak-----	--- 80 80	--- 57 57	Common hackberry, common persimmon, eastern cottonwood, pin oak, swamp white oak.
104B: Virgil-----	Black walnut----- Northern red oak----- White oak-----	--- 80 80	--- 57 57	Common hackberry, common persimmon, eastern cottonwood, pin oak, swamp white oak.
105A: Batavia-----	Black walnut----- Northern red oak----- White oak-----	--- --- 80	--- --- 57	Black walnut, eastern white pine, northern red oak, red pine, white oak.
105B: Batavia-----	Black walnut----- Northern red oak----- White oak-----	--- --- 80	--- --- 57	Black walnut, eastern white pine, northern red oak, red pine, white oak.
105C: Batavia-----	Black walnut----- Northern red oak----- White oak-----	--- --- 80	--- --- 57	Black walnut, eastern white pine, northern red oak, red pine, white oak.
119C2: Elco-----	Black walnut----- Northern red oak----- White oak-----	--- 85 85	--- 72 72	Black oak, bur oak, chinkapin oak, common hackberry, eastern redcedar.
134B: Camden-----	Green ash----- Northern red oak----- Sweetgum----- Tuliptree----- White oak-----	76 85 80 95 85	72 72 86 100 72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
134C2:				
Camden-----	Northern red oak-----	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	85	72	
	Sweetgum-----	80	86	
	Tuliptree-----	95	100	
134C3:				
Camden-----	Northern red oak-----	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	85	72	
	Green ash-----	76	72	
	Sweetgum-----	80	86	
	Tuliptree-----	95	100	
134D2:				
Camden-----	Northern red oak-----	85	72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	White oak-----	85	72	
	Green ash-----	76	72	
	Sweetgum-----	80	86	
	Tuliptree-----	95	100	
148C2:				
Proctor-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
152A:				
Drummer-----	---	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
219A:				
Millbrook-----	Black walnut-----	---	---	Black walnut, northern red oak, sugar maple, white oak.
	Northern red oak-----	80	57	
	Tuliptree-----	90	86	
	White oak-----	80	57	
227B:				
Argyle-----	Black walnut-----	---	---	Scotch pine, black walnut, eastern white pine, northern red oak, red pine, white oak.
	Northern red oak-----	---	---	
	White oak-----	80	57	
227C2:				
Argyle-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	---	---	
	White oak-----	80	57	
233B:				
Birkbeck-----	Green ash-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	---	---	
	White oak-----	86	72	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
233C2: Birkbeck-----	White oak----- Green ash----- Northern red oak-----	86 --- ---	72 --- ---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
233D2: Birkbeck-----	Green ash----- Northern red oak----- White oak-----	--- --- 86	--- --- 72	Scotch pine, black walnut, eastern white pine, northern red oak, red pine, white oak.
242A: Kendall-----	White oak----- Black walnut----- Northern red oak----- Tuliptree-----	80 --- 80 90	57 --- 57 86	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
242B: Kendall-----	Black walnut----- Northern red oak----- Tuliptree----- White oak-----	--- 80 90 80	--- 57 86 57	Black walnut, eastern white pine, northern red oak, red pine, white oak.
243A: St. Charles-----	Green ash----- Northern red oak----- Sweetgum----- Tuliptree----- White oak-----	--- 85 --- 95 85	--- 72 --- 100 72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
243B: St. Charles-----	Northern red oak----- Sweetgum----- Tuliptree----- White oak-----	85 --- 95 85	72 --- 100 72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
243C2: St. Charles-----	Green ash----- Northern red oak----- Sweetgum----- Tuliptree----- White oak-----	--- 85 --- 95 85	--- 72 --- 100 72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
259C2: Assumption-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
278A: Stronghurst-----	Bur oak----- Green ash----- Northern red oak----- White oak-----	--- --- 70 70	--- --- 57 57	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
279A:				
Rozetta-----	Black walnut-----	---	---	Black walnut, eastern
	Northern red oak-----	80	57	cottonwood, eastern white
	Tuliptree-----	90	86	pine, northern red oak,
	White oak-----	80	57	pecan, pin oak, tuliptree, white oak.
279B:				
Rozetta-----	White oak-----	80	57	Black walnut, eastern
	Northern red oak-----	80	57	cottonwood, eastern white
	Tuliptree-----	90	86	pine, northern red oak,
	Black walnut-----	---	---	pecan, pin oak, tuliptree, white oak.
280B:				
Fayette-----	Black walnut-----	---	---	Black walnut, eastern
	Northern red oak-----	80	57	cottonwood, eastern white
	Tuliptree-----	90	86	pine, northern red oak,
	White oak-----	80	57	pecan, pin oak, tuliptree, white oak.
280C2:				
Fayette-----	Northern red oak-----	80	57	Black walnut, eastern
	White oak-----	80	57	cottonwood, eastern white
	Black walnut-----	---	---	pine, northern red oak,
	Tuliptree-----	90	86	pecan, pin oak, tuliptree, white oak.
280C3:				
Fayette-----	Black walnut-----	---	---	Black walnut, eastern
	Northern red oak-----	80	57	cottonwood, eastern white
	Tuliptree-----	90	86	pine, northern red oak,
	White oak-----	80	57	pecan, pin oak, tuliptree, white oak.
280D2:				
Fayette-----	Black walnut-----	---	---	Black walnut, eastern
	Northern red oak-----	80	57	cottonwood, eastern white
	Tuliptree-----	90	86	pine, northern red oak,
	White oak-----	80	57	pecan, pin oak, tuliptree, white oak.
344A:				
Harvard-----	Northern red oak-----	85	72	Black walnut, eastern
	Shagbark hickory-----	85	72	cottonwood, eastern white
	White ash-----	---	---	pine, northern red oak,
	White oak-----	---	---	pecan, pin oak, white oak.
344B:				
Harvard-----	Northern red oak-----	85	72	Black walnut, eastern
	Shagbark hickory-----	85	72	cottonwood, eastern white
	White ash-----	---	---	pine, northern red oak,
	White oak-----	---	---	pecan, pin oak, white oak.
344C2:				
Harvard-----	Northern red oak-----	85	72	Black walnut, eastern
	Shagbark hickory-----	---	---	cottonwood, eastern white
	White ash-----	---	---	pine, northern red oak,
	White oak-----	85	72	pecan, pin oak, tuliptree, white oak.

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
361D3: Kidder-----	Northern red oak----- Shagbark hickory----- White ash----- White oak-----	63 --- --- ---	57 --- --- ---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
361E2: Kidder-----	Northern red oak----- Shagbark hickory----- White ash----- White oak-----	63 --- --- ---	57 --- --- ---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, white oak.
403D2: Elizabeth-----	Black oak----- Bur oak----- Eastern redcedar----- Northern red oak----- Shagbark hickory-----	60 60 --- --- ---	43 43 --- --- ---	Bur oak, chinkapin oak, eastern redcedar, thornless honeylocust.
403F2: Elizabeth-----	Black oak----- Bur oak----- Eastern redcedar----- Northern red oak----- Shagbark hickory-----	60 60 --- --- ---	43 43 --- --- ---	Bur oak, chinkapin oak, eastern redcedar, thornless honeylocust.
410B: Woodbine-----	Bur oak----- Green ash----- Northern red oak----- White oak-----	--- --- 70 70	--- --- 57 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
410C2: Woodbine-----	Bur oak----- Green ash----- Northern red oak----- White oak-----	--- --- 70 70	--- --- 57 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
410C3: Woodbine-----	Bur oak----- Green ash----- Northern red oak----- White oak-----	--- --- 70 70	--- --- 57 57	Scotch pine, eastern redcedar, eastern white pine, red pine.
410D2: Woodbine-----	Bur oak----- Green ash----- Northern red oak----- White oak-----	--- --- 70 70	--- --- 57 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
411B: Ashdale-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
411C2: Ashdale-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
412B: Ogle-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
412C2: Ogle-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
414B: Myrtle-----	Black walnut----- Northern red oak----- White oak-----	--- 80 80	--- 57 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
414C: Myrtle-----	Black walnut----- Northern red oak----- White oak-----	--- 80 80	--- 57 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
414C2: Myrtle-----	Black walnut----- Northern red oak----- White oak-----	--- 80 80	--- 57 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
416B: Durand-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
417C2: Derinda-----	Bur oak----- Green ash----- Northern red oak----- White oak-----	--- --- 70 70	--- --- 57 57	Eastern redcedar, eastern white pine, red pine.
417C3: Derinda-----	Bur oak----- Green ash----- Northern red oak----- White oak-----	--- --- 70 70	--- --- 57 57	Eastern redcedar, eastern white pine, red pine.

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
417D2: Derinda-----	Bur oak-----	---	---	Eastern redcedar, eastern white pine, red pine.
	Green ash-----	---	---	
	Northern red oak-----	70	57	
	White oak-----	70	57	
419B: Flagg-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	White oak-----	80	57	
419C2: Flagg-----	Black walnut-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	White oak-----	80	57	
429B: Palsgrove-----	Bur oak-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Green ash-----	---	---	
	Northern red oak-----	70	57	
	White oak-----	70	57	
429C2: Palsgrove-----	Bur oak-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Green ash-----	---	---	
	Northern red oak-----	70	57	
	White oak-----	70	57	
429D2: Palsgrove-----	Bur oak-----	---	---	Scotch pine, eastern redcedar, eastern white pine, red pine.
	Green ash-----	---	---	
	Northern red oak-----	70	57	
	White oak-----	70	57	
506B: Hitt-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
506C2: Hitt-----	---	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
547B: Eleroy-----	Bur oak-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	---	---	
	White oak-----	70	57	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
547C2: Eleroy-----	Bur oak----- Northern red oak----- White oak-----	--- --- 70	--- --- 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
572B: Loran-----	---	---	---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
572C: Loran-----	---	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
618C2: Senachwine-----	Sweetgum----- Tuliptree----- White oak-----	76 98 90	72 100 72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
618C3: Senachwine-----	Northern red oak----- Tuliptree----- White oak-----	90 98 90	72 100 72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
618D2: Senachwine-----	Sweetgum----- Tuliptree----- White oak-----	76 98 90	72 100 72	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
656C2: Octagon-----	Northern red oak----- American beech----- Shagbark hickory----- Sugar maple----- White ash----- White oak-----	69 --- --- --- --- ---	57 --- --- --- --- ---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
656D2: Octagon-----	Northern red oak----- American beech----- Shagbark hickory----- Sugar maple----- White ash----- White oak-----	69 --- --- --- --- ---	57 --- --- --- --- ---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
675A: Greenbush-----	Black walnut----- Northern red oak----- Tuliptree----- White oak-----	--- 80 90 80	--- 57 86 57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
675B:				
Greenbush-----	White oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	Black walnut-----	---	---	
	Tuliptree-----	90	86	
675C:				
Greenbush-----	White oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	Black walnut-----	---	---	
	Tuliptree-----	90	86	
675C2:				
Greenbush-----	White oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Northern red oak-----	80	57	
	Black walnut-----	---	---	
	Tuliptree-----	90	86	
731B:				
Nasset-----	Northern red oak-----	65	57	Black walnut, eastern white pine, red pine, sugar maple.
	White oak-----	65	57	
731C2:				
Nasset-----	Northern red oak-----	65	57	Black walnut, eastern white pine, red pine, sugar maple.
	White oak-----	65	57	
732B:				
Appleriver-----	Bur oak-----	---	---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Green ash-----	---	---	
	Northern red oak-----	---	---	
	White oak-----	70	57	
732C:				
Appleriver-----	Bur oak-----	---	---	Common hackberry, eastern cottonwood, pecan, pin oak, swamp white oak.
	Green ash-----	---	---	
	Northern red oak-----	---	---	
	White oak-----	70	57	
735C2:				
Casco-----	Eastern white pine-----	85	200	Black oak, common hackberry, eastern white pine.
	Jack pine-----	68	100	
	Red pine-----	78	143	
	White oak-----	70	57	
Rodman-----	Northern red oak-----	45	29	Bur oak, chinkapin oak, eastern redcedar, honeylocust.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
Fox-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sugar maple-----	---	---	
	White oak-----	---	---	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
735D2:				
Casco-----	Eastern white pine-----	85	200	Black oak, common hackberry, eastern white pine.
	Jack pine-----	68	100	
	Red pine-----	78	143	
	White oak-----	70	57	
Rodman-----	Northern red oak-----	45	29	Bur oak, chinkapin oak, eastern redcedar, honeylocust.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
Fox-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sugar maple-----	---	---	
	White oak-----	---	---	
735E2:				
Casco-----	Eastern white pine-----	85	200	Black oak, common hackberry, eastern white pine.
	Jack pine-----	68	100	
	Red pine-----	78	143	
	White oak-----	70	57	
Rodman-----	Northern red oak-----	45	29	Bur oak, chinkapin oak, eastern redcedar, honeylocust.
	Shagbark hickory-----	---	---	
	White oak-----	---	---	
Fox-----	Northern red oak-----	80	57	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Sugar maple-----	---	---	
	White oak-----	---	---	
753B:				
Massbach-----	Northern red oak-----	---	---	Scotch pine, bur oak, eastern white pine, northern red oak, red pine, white oak.
	White oak-----	70	57	
753C2:				
Massbach-----	Northern red oak-----	---	---	Scotch pine, bur oak, eastern white pine, northern red oak, red pine, white oak.
	White oak-----	70	57	
905F:				
NewGlarus-----	Black walnut-----	---	---	Black oak, common hackberry, eastern white pine.
	Green ash-----	---	---	
	Northern red oak-----	80	57	
	Tuliptree-----	88	86	
	White ash-----	---	---	
Lamoille-----	American basswood-----	55	29	Black oak, common hackberry, eastern white pine.
	Green ash-----	52	29	
	Northern red oak-----	55	43	
	Shagbark hickory-----	50	---	
	Sugar maple-----	50	29	
	White oak-----	52	29	

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
928D2:				
NewGlarus-----	Black walnut-----	---	---	Black oak, common hackberry, eastern white pine.
	Green ash-----	---	---	
	Northern red oak-----	80	57	
	Tuliptree-----	88	86	
	White ash-----	---	---	
Palsgrove-----	Bur oak-----	---	---	Black walnut, eastern cottonwood, eastern white pine, northern red oak, pecan, pin oak, tuliptree, white oak.
	Green ash-----	---	---	
	Northern red oak-----	70	57	
	White oak-----	70	57	
1107A:				
Sawmill-----	American sycamore-----	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	Cherrybark oak-----	---	---	
	Eastern cottonwood-----	---	---	
	Pin oak-----	90	72	
	Sweetgum-----	---	---	
3074A:				
Radford-----	Eastern cottonwood-----	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	Pin oak-----	96	72	
	Sweetgum-----	86	100	
	Tuliptree-----	90	86	
	White ash-----	---	---	
3107A:				
Sawmill-----	Pin oak-----	90	72	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	American sycamore-----	---	---	
	Eastern cottonwood-----	---	---	
	Sweetgum-----	---	---	
3451A:				
Lawson-----	Silver maple-----	70	29	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
	White ash-----	---	---	
8070A:				
Beaucoup-----	American sycamore-----	---	---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
	Cherrybark oak-----	---	---	
	Eastern cottonwood-----	100	129	
	Pin oak-----	90	72	
	Sweetgum-----	---	---	
8074A:				
Radford-----	---	---	---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
8076A:				
Otter-----	Silver maple-----	94	43	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
8077A: Huntsville-----	Eastern cottonwood----- American sycamore----- Green ash-----	110 --- ---	157 --- ---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
8082A: Millington-----	American beech----- American sycamore----- Blackgum----- Northern red oak----- Pin oak----- Red maple----- Shagbark hickory----- Swamp white oak----- White ash-----	--- --- --- --- --- --- --- --- ---	--- --- --- --- --- --- --- --- ---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
8103A: Houghton-----	Black willow----- Quaking aspen----- Red maple----- Silver maple----- White ash-----	--- 56 51 76 51	--- 57 29 29 29	Common persimmon, eastern cottonwood, pin oak, swamp white oak, sweetgum, tamarack.
8107A: Sawmill-----	American sycamore----- Cherrybark oak----- Eastern cottonwood----- Pin oak----- Sweetgum-----	--- --- --- 90 ---	--- --- --- 72 ---	Common hackberry, eastern cottonwood, pin oak, river birch, swamp white oak, sweetgum.
8210A: Lena-----	---	---	---	Common persimmon, eastern cottonwood, pin oak, swamp white oak, sweetgum, tamarack.
8239A: Dorchester-----	Northern red oak----- White oak-----	55 55	43 43	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
8415A: Orion-----	Red maple----- Silver maple----- White ash-----	--- 80 ---	--- 29 ---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.
8451A: Lawson-----	Silver maple----- White ash-----	70 ---	29 ---	Common hackberry, common persimmon, eastern cottonwood, pecan, pin oak, swamp white oak.

Table 12.--Forestland Productivity--Continued

Map symbol and soil name	Potential productivity			Suggested trees to plant
	Common trees	Site index	Volume of wood fiber cu ft/ac	
8579A: Beavercreek-----	Black walnut-----	55	---	Bur oak, common hackberry, eastern cottonwood, eastern redcedar.
	Butternut-----	55	---	
	Eastern white pine-----	50	86	
	Northern red oak-----	55	43	
	White oak-----	55	43	

Table 13a.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Not limited		Not limited		Somewhat limited Slope	0.28
21C2: Pecatonica-----	Not limited		Not limited		Very limited Slope	1.00
22C2: Westville-----	Not limited		Not limited		Very limited Slope	1.00
22C3: Westville-----	Not limited		Not limited		Very limited Slope	1.00
22D2: Westville-----	Somewhat limited Slope	0.96	Somewhat limited Slope	0.96	Very limited Slope	1.00
29C2: Dubuque-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.35
29D2: Dubuque-----	Somewhat limited Slow water movement Slope	0.96 0.37	Somewhat limited Slow water movement Slope	0.96 0.37	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.29
40C2: Dodgeville-----	Somewhat limited Slow water movement Slope	0.96 0.16	Somewhat limited Slow water movement Slope	0.96 0.16	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.20
40D2: Dodgeville-----	Somewhat limited Slope Slow water movement	0.96 0.96	Somewhat limited Slope Slow water movement	0.96 0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.20
51A: Muscatune-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
51B: Muscatune-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone Slope	0.98 0.28
61A: Atterberry-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
61B: Atterberry-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone Slope	1.00 0.28
67A: Harpster-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
68A: Sable-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
86A: Osc-----	Not limited		Not limited		Not limited	
86B: Osc-----	Not limited		Not limited		Somewhat limited Slope	0.28
86C: Osc-----	Not limited		Not limited		Very limited Slope	1.00
86C2: Osc-----	Not limited		Not limited		Very limited Slope	1.00
87B: Dickinson-----	Not limited		Not limited		Somewhat limited Slope	0.28
87C2: Dickinson-----	Not limited		Not limited		Very limited Slope	1.00
104A: Virgil-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
104B: Virgil-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone Slope	1.00 0.28
105A: Batavia-----	Not limited		Not limited		Not limited	
105B: Batavia-----	Not limited		Not limited		Somewhat limited Slope	0.50
105C: Batavia-----	Not limited		Not limited		Somewhat limited Slope	0.88
119C2: Elco-----	Somewhat limited Slow water movement	0.43	Somewhat limited Slow water movement	0.43	Very limited Slope Slow water movement	1.00 0.43
134B: Camden-----	Not limited		Not limited		Somewhat limited Slope	0.28
134C2: Camden-----	Not limited		Not limited		Very limited Slope	1.00
134C3: Camden-----	Not limited		Not limited		Very limited Slope	1.00
134D2: Camden-----	Somewhat limited Slope	0.96	Somewhat limited Slope	0.96	Very limited Slope	1.00
148A: Proctor-----	Not limited		Not limited		Not limited	
148B: Proctor-----	Not limited		Not limited		Somewhat limited Slope	0.28
148C2: Proctor-----	Not limited		Not limited		Very limited Slope	1.00
152A: Drummer-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
198A: Elburn-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone	0.98

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
198B: Elburn-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone Slope	0.98 0.28
199A: Plano-----	Not limited		Not limited		Not limited	
199B: Plano-----	Not limited		Not limited		Somewhat limited Slope	0.28
199C2: Plano-----	Not limited		Not limited		Very limited Slope	1.00
206A: Thorp-----	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.96	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.96	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.96
219A: Millbrook-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
227B: Argyle-----	Not limited		Not limited		Somewhat limited Slope	0.28
227C2: Argyle-----	Not limited		Not limited		Very limited Slope	1.00
233B: Birkbeck-----	Not limited		Not limited		Somewhat limited Slope	0.28
233C2: Birkbeck-----	Not limited		Not limited		Very limited Slope	1.00
233D2: Birkbeck-----	Somewhat limited Slope	0.96	Somewhat limited Slope	0.96	Very limited Slope	1.00
242A: Kendall-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
242B: Kendall-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone Slope	1.00 0.12

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
243A: St. Charles-----	Not limited		Not limited		Not limited	
243B: St. Charles-----	Not limited		Not limited		Somewhat limited Slope	0.28
243C2: St. Charles-----	Not limited		Not limited		Very limited Slope	1.00
259C2: Assumption-----	Somewhat limited Slow water movement	0.43	Somewhat limited Slow water movement	0.43	Very limited Slope Slow water movement	1.00 0.43
272A: Edgington-----	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.21	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.21	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.21
278A: Stronghurst-----	Very limited Depth to saturated zone	1.00	Somewhat limited Depth to saturated zone	0.94	Very limited Depth to saturated zone	1.00
279A: Rozetta-----	Not limited		Not limited		Not limited	
279B: Rozetta-----	Not limited		Not limited		Somewhat limited Slope	0.28
280B: Fayette-----	Not limited		Not limited		Somewhat limited Slope	0.28
280C2: Fayette-----	Not limited		Not limited		Very limited Slope	1.00
280C3: Fayette-----	Not limited		Not limited		Very limited Slope	1.00
280D2: Fayette-----	Somewhat limited Slope	0.96	Somewhat limited Slope	0.96	Very limited Slope	1.00
290C2: Warsaw-----	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01	Very limited Slope	1.00
344A: Harvard-----	Not limited		Not limited		Not limited	

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
344B: Harvard-----	Not limited		Not limited		Somewhat limited Slope	0.28
344C2: Harvard-----	Not limited		Not limited		Very limited Slope	1.00
361D3: Kidder-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
361E2: Kidder-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
363D2: Griswold-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
403D2: Elizabeth-----	Very limited Depth to bedrock Slope	1.00 0.96	Very limited Depth to bedrock Slope	1.00 0.96	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.39
403F2: Elizabeth-----	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Gravel content	1.00 1.00 0.39
410B: Woodbine-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement Slope	0.96 0.28
410C2: Woodbine-----	Not limited		Not limited		Very limited Slope	1.00
410C3: Woodbine-----	Somewhat limited Slow water movement Slope	0.96 0.16	Somewhat limited Slow water movement Slope	0.96 0.16	Very limited Slope Slow water movement	1.00 0.96
410D2: Woodbine-----	Somewhat limited Slope	0.96	Somewhat limited Slope	0.96	Very limited Slope	1.00
411B: Ashdale-----	Not limited		Not limited		Somewhat limited Slope	0.28
411C2: Ashdale-----	Not limited		Not limited		Very limited Slope	1.00

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
412B: Ogle-----	Not limited		Not limited		Somewhat limited Slope	0.28
412C2: Ogle-----	Not limited		Not limited		Very limited Slope	1.00
414B: Myrtle-----	Not limited		Not limited		Somewhat limited Slope	0.28
414C: Myrtle-----	Not limited		Not limited		Very limited Slope	1.00
414C2: Myrtle-----	Not limited		Not limited		Very limited Slope	1.00
416B: Durand-----	Not limited		Not limited		Somewhat limited Slope	0.28
416C2: Durand-----	Not limited		Not limited		Very limited Slope	1.00
417C2: Derinda-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.84
417C3: Derinda-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.84
417D2: Derinda-----	Somewhat limited Slope Slow water movement	0.96 0.96	Somewhat limited Slope Slow water movement	0.96 0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.84
418C2: Schapville-----	Somewhat limited Slow water movement Slope	0.96 0.01	Somewhat limited Slow water movement Slope	0.96 0.01	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.16
419B: Flagg-----	Not limited		Not limited		Somewhat limited Slope	0.28

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
419C2: Flagg-----	Not limited		Not limited		Very limited Slope	1.00
429B: Palsgrove-----	Not limited		Not limited		Somewhat limited Slope	0.28
429C2: Palsgrove-----	Not limited		Not limited		Very limited Slope	1.00
429D2: Palsgrove-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
506B: Hitt-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement Slope	0.96 0.28
506C2: Hitt-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement	1.00 0.96
546B: Keltner-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement Slope	0.96 0.28
546C2: Keltner-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement	1.00 0.96
547B: Eleroy-----	Very limited Slow water movement	1.00	Very limited Slow water movement	1.00	Very limited Slow water movement Slope	1.00 0.28
547C2: Eleroy-----	Not limited		Not limited		Very limited Slope	1.00
572B: Loran-----	Somewhat limited Depth to saturated zone	0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone Slope	0.98 0.28

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
572C: Loran-----	Somewhat limited Depth to saturated zone Slow water movement	0.98 0.96	Somewhat limited Slow water movement Depth to saturated zone	0.96 0.75	Very limited Slope Depth to saturated zone Slow water movement	1.00 0.98 0.96
618C2: Senachwine-----	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Very limited Slope Slow water movement	1.00 0.21
618C3: Senachwine-----	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Very limited Slope Slow water movement	1.00 0.21
618D2: Senachwine-----	Somewhat limited Slope Slow water movement	0.96 0.21	Somewhat limited Slope Slow water movement	0.96 0.21	Very limited Slope Slow water movement	1.00 0.21
622B: Wyanet-----	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slope Slow water movement	0.28 0.21
622C2: Wyanet-----	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Very limited Slope Slow water movement	1.00 0.21
656C2: Octagon-----	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slope Slow water movement	0.88 0.21
656D2: Octagon-----	Somewhat limited Slow water movement Slope	0.21 0.04	Somewhat limited Slow water movement Slope	0.21 0.04	Very limited Slope Slow water movement	1.00 0.21
675A: Greenbush-----	Not limited		Not limited		Not limited	
675B: Greenbush-----	Not limited		Not limited		Somewhat limited Slope	0.28
675C: Greenbush-----	Not limited		Not limited		Very limited Slope	1.00

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
675C2: Greenbush-----	Not limited		Not limited		Very limited Slope	1.00
686B: Parkway-----	Not limited		Not limited		Somewhat limited Slope	0.28
686C2: Parkway-----	Not limited		Not limited		Very limited Slope	1.00
731B: Nasset-----	Not limited		Not limited		Somewhat limited Slope	0.12
731C2: Nasset-----	Not limited		Not limited		Very limited Slope	1.00
732B: Appleriver-----	Somewhat limited Slow water movement Depth to saturated zone	0.99 0.98	Somewhat limited Slow water movement Depth to saturated zone	0.99 0.75	Somewhat limited Slow water movement Depth to saturated zone Slope	0.99 0.98 0.28
732C: Appleriver-----	Somewhat limited Slow water movement Depth to saturated zone	0.99 0.98	Somewhat limited Slow water movement Depth to saturated zone	0.99 0.75	Very limited Slope Slow water movement Depth to saturated zone	1.00 0.99 0.98
735C2: Casco-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
Rodman-----	Somewhat limited Gravel content Slope	0.17 0.16	Somewhat limited Gravel content Slope	0.17 0.16	Very limited Slope Gravel content	1.00 1.00
Fox-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
735D2: Casco-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
Rodman-----	Somewhat limited Gravel content Slope	0.17 0.16	Somewhat limited Gravel content Slope	0.17 0.16	Very limited Slope Gravel content	1.00 1.00
Fox-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
735E2:						
Casco-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Rodman-----	Very limited Slope Gravel content	1.00 0.17	Very limited Slope Gravel content	1.00 0.17	Very limited Slope Gravel content	1.00 1.00
Fox-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
745B:						
Shullsburg-----	Somewhat limited Depth to saturated zone Slow water movement	0.99 0.96	Somewhat limited Slow water movement Depth to saturated zone	0.96 0.78	Somewhat limited Depth to saturated zone Slow water movement Depth to bedrock Slope	0.99 0.96 0.65 0.28
745C2:						
Shullsburg-----	Somewhat limited Depth to saturated zone Slow water movement	0.99 0.96	Somewhat limited Slow water movement Depth to saturated zone	0.96 0.78	Very limited Slope Depth to saturated zone Slow water movement Depth to bedrock	1.00 0.99 0.96 0.65
752C2:						
Oneco-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement	1.00 0.96
753B:						
Massbach-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement Slope	0.96 0.12
753C2:						
Massbach-----	Somewhat limited Slow water movement	0.96	Somewhat limited Slow water movement	0.96	Very limited Slope Slow water movement	1.00 0.96
802B:						
Orthents, loamy----	Somewhat limited Slow water movement	0.21	Somewhat limited Slow water movement	0.21	Somewhat limited Slope Slow water movement	0.50 0.21
864:						
Pits, quarries-----	Not rated		Not rated		Not rated	
865:						
Pits, gravel-----	Not rated		Not rated		Not rated	

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
905F: NewGlarus-----	Very limited Slope Slow water movement	1.00 0.96	Very limited Slope Slow water movement	1.00 0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.16
Lamoille-----	Very limited Slope Slow water movement	1.00 0.43	Very limited Slope Slow water movement	1.00 0.43	Very limited Slope Slow water movement	1.00 0.43
928D2: NewGlarus-----	Somewhat limited Slope Slow water movement	0.96 0.96	Somewhat limited Slope Slow water movement	0.96 0.96	Very limited Slope Slow water movement Depth to bedrock	1.00 0.96 0.06
Palsgrove-----	Somewhat limited Slope	0.96	Somewhat limited Slope	0.96	Very limited Slope	1.00
1107A: Sawmill-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00
3074A: Radford-----	Very limited Flooding Depth to saturated zone	1.00 0.98	Somewhat limited Depth to saturated zone Flooding	0.75 0.40	Very limited Flooding Depth to saturated zone	1.00 0.98
3107A: Sawmill-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00
3451A: Lawson-----	Very limited Flooding Depth to saturated zone	1.00 0.98	Somewhat limited Depth to saturated zone Flooding	0.75 0.40	Very limited Flooding Depth to saturated zone	1.00 0.98
8070A: Beaucoup-----	Very limited Depth to saturated zone Flooding Ponding Slow water movement	1.00 1.00 1.00 0.21	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 0.21	Very limited Depth to saturated zone Ponding Flooding Slow water movement	1.00 1.00 0.60 0.21

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8074A: Radford-----	Very limited Flooding Depth to saturated zone	1.00 0.81	Somewhat limited Depth to saturated zone	0.48	Somewhat limited Depth to saturated zone Flooding	0.81 0.60
8076A: Otter-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.60
8077A: Huntsville-----	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
8082A: Millington-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.60
8103A: Houghton-----	Very limited Depth to saturated zone Flooding Gravel content Organic matter content Ponding	1.00 1.00 1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Organic matter content Gravel content Ponding	1.00 1.00 1.00 1.00	Very limited Gravel content Depth to saturated zone Organic matter content Ponding Flooding	1.00 1.00 1.00 1.00 0.60
8107A: Sawmill-----	Very limited Depth to saturated zone Flooding Ponding	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.60
8210A: Lena-----	Very limited Depth to saturated zone Flooding Gravel content Organic matter content Ponding	1.00 1.00 1.00 1.00 1.00 1.00	Very limited Depth to saturated zone Organic matter content Gravel content Ponding	1.00 1.00 1.00 1.00	Very limited Gravel content Depth to saturated zone Organic matter content Ponding Flooding	1.00 1.00 1.00 1.00 0.60
8239A: Dorchester-----	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60
8415A: Orion-----	Very limited Flooding Depth to saturated zone	1.00 0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone Flooding	0.98 0.60

Table 13a.--Recreational Development--Continued

Map symbol and soil name	Camp areas		Picnic areas		Playgrounds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8451A: Lawson-----	Very limited Flooding Depth to saturated zone	1.00 0.98	Somewhat limited Depth to saturated zone	0.75	Somewhat limited Depth to saturated zone Flooding	0.98 0.60
8579A: Beavercreek-----	Very limited Flooding	1.00	Not limited		Somewhat limited Flooding	0.60

Table 13b.--Recreational Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Not limited		Not limited		Not limited	
21C2: Pecatonica-----	Not limited		Not limited		Not limited	
22C2: Westville-----	Not limited		Not limited		Not limited	
22C3: Westville-----	Not limited		Not limited		Not limited	
22D2: Westville-----	Not limited		Not limited		Somewhat limited Slope	0.96
29C2: Dubuque-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.35
29D2: Dubuque-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope Depth to bedrock	0.37 0.29
40C2: Dodgeville-----	Not limited		Not limited		Somewhat limited Depth to bedrock Slope	0.20 0.16
40D2: Dodgeville-----	Not limited		Not limited		Somewhat limited Slope Depth to bedrock	0.96 0.20
51A: Muscatune-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
51B: Muscatune-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
61A: Atterberry-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
61B: Atterberry-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
67A: Harpster-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
68A: Sable-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
86A: Osc-----	Not limited		Not limited		Not limited	
86B: Osc-----	Not limited		Not limited		Not limited	
86C: Osc-----	Not limited		Not limited		Not limited	
86C2: Osc-----	Not limited		Not limited		Not limited	
87B: Dickinson-----	Not limited		Not limited		Not limited	
87C2: Dickinson-----	Not limited		Not limited		Not limited	
104A: Virgil-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
104B: Virgil-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
105A: Batavia-----	Not limited		Not limited		Not limited	
105B: Batavia-----	Not limited		Not limited		Not limited	
105C: Batavia-----	Not limited		Not limited		Not limited	
119C2: Elco-----	Not limited		Not limited		Not limited	
134B: Camden-----	Not limited		Not limited		Not limited	
134C2: Camden-----	Not limited		Not limited		Not limited	
134C3: Camden-----	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
134D2: Camden-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.96
148A: Proctor-----	Not limited		Not limited		Not limited	
148B: Proctor-----	Not limited		Not limited		Not limited	
148C2: Proctor-----	Not limited		Not limited		Not limited	
152A: Drummer-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
198A: Elburn-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
198B: Elburn-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
199A: Plano-----	Not limited		Not limited		Not limited	
199B: Plano-----	Not limited		Not limited		Not limited	
199C2: Plano-----	Not limited		Not limited		Not limited	
206A: Thorp-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
219A: Millbrook-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
227B: Argyle-----	Not limited		Not limited		Not limited	
227C2: Argyle-----	Not limited		Not limited		Not limited	
233B: Birkbeck-----	Not limited		Not limited		Not limited	
233C2: Birkbeck-----	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233D2: Birkbeck-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.96
242A: Kendall-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
242B: Kendall-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
243A: St. Charles-----	Not limited		Not limited		Not limited	
243B: St. Charles-----	Not limited		Not limited		Not limited	
243C2: St. Charles-----	Not limited		Not limited		Not limited	
259C2: Assumption-----	Not limited		Not limited		Not limited	
272A: Edgington-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
278A: Stronghurst-----	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.86	Somewhat limited Depth to saturated zone	0.94
279A: Rozetta-----	Not limited		Not limited		Not limited	
279B: Rozetta-----	Not limited		Not limited		Not limited	
280B: Fayette-----	Not limited		Not limited		Not limited	
280C2: Fayette-----	Not limited		Not limited		Not limited	
280C3: Fayette-----	Not limited		Not limited		Not limited	
280D2: Fayette-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.96
290C2: Warsaw-----	Not limited		Not limited		Somewhat limited Slope	0.01

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
344A: Harvard-----	Not limited		Not limited		Not limited	
344B: Harvard-----	Not limited		Not limited		Not limited	
344C2: Harvard-----	Not limited		Not limited		Not limited	
361D3: Kidder-----	Not limited		Not limited		Somewhat limited Slope	0.04
361E2: Kidder-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope	1.00
363D2: Grissold-----	Not limited		Not limited		Somewhat limited Slope	0.04
403D2: Elizabeth-----	Not limited		Not limited		Very limited Droughty Depth to bedrock Slope	1.00 1.00 0.96
403F2: Elizabeth-----	Very limited Slope	1.00	Somewhat limited Slope	0.02	Very limited Slope Depth to bedrock Droughty	1.00 1.00 0.99
410B: Woodbine-----	Not limited		Not limited		Not limited	
410C2: Woodbine-----	Not limited		Not limited		Not limited	
410C3: Woodbine-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.16
410D2: Woodbine-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.96
411B: Ashdale-----	Not limited		Not limited		Not limited	
411C2: Ashdale-----	Not limited		Not limited		Not limited	
412B: Ogle-----	Not limited		Not limited		Not limited	
412C2: Ogle-----	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
414B: Myrtle-----	Not limited		Not limited		Not limited	
414C: Myrtle-----	Not limited		Not limited		Not limited	
414C2: Myrtle-----	Not limited		Not limited		Not limited	
416B: Durand-----	Not limited		Not limited		Not limited	
416C2: Durand-----	Not limited		Not limited		Not limited	
417C2: Derinda-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.84
417C3: Derinda-----	Not limited		Not limited		Somewhat limited Depth to bedrock	0.84
417D2: Derinda-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope Depth to bedrock	0.96 0.84
418C2: Schapville-----	Not limited		Not limited		Somewhat limited Depth to bedrock Slope	0.16 0.01
419B: Flagg-----	Not limited		Not limited		Not limited	
419C2: Flagg-----	Not limited		Not limited		Not limited	
429B: Palsgrove-----	Not limited		Not limited		Not limited	
429C2: Palsgrove-----	Not limited		Not limited		Not limited	
429D2: Palsgrove-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.16
506B: Hitt-----	Not limited		Not limited		Not limited	
506C2: Hitt-----	Not limited		Not limited		Not limited	
546B: Keltner-----	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
546C2: Keltner-----	Not limited		Not limited		Not limited	
547B: Eleroy-----	Not limited		Not limited		Not limited	
547C2: Eleroy-----	Not limited		Not limited		Not limited	
572B: Loran-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
572C: Loran-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
618C2: Senachwine-----	Not limited		Not limited		Not limited	
618C3: Senachwine-----	Not limited		Not limited		Somewhat limited Droughty	0.06
618D2: Senachwine-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.96
622B: Wyanet-----	Not limited		Not limited		Not limited	
622C2: Wyanet-----	Not limited		Not limited		Not limited	
656C2: Octagon-----	Not limited		Not limited		Not limited	
656D2: Octagon-----	Not limited		Not limited		Somewhat limited Slope	0.04
675A: Greenbush-----	Not limited		Not limited		Not limited	
675B: Greenbush-----	Not limited		Not limited		Not limited	
675C: Greenbush-----	Not limited		Not limited		Not limited	
675C2: Greenbush-----	Not limited		Not limited		Not limited	
686B: Parkway-----	Not limited		Not limited		Not limited	
686C2: Parkway-----	Not limited		Not limited		Not limited	

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
731B: Nasset-----	Not limited		Not limited		Not limited	
731C2: Nasset-----	Not limited		Not limited		Not limited	
732B: Appleriver-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
732C: Appleriver-----	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
735C2: Casco-----	Not limited		Not limited		Somewhat limited Droughty Slope	0.23 0.16
Rodman-----	Not limited		Not limited		Very limited Droughty Gravel content Slope	1.00 0.17 0.16
Fox-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.16
735D2: Casco-----	Not limited		Not limited		Somewhat limited Droughty Slope	0.23 0.16
Rodman-----	Not limited		Not limited		Very limited Droughty Gravel content Slope	1.00 0.17 0.16
Fox-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.16
735E2: Casco-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope Droughty	1.00 0.45
Rodman-----	Somewhat limited Slope	0.02	Not limited		Very limited Slope Droughty Gravel content	1.00 1.00 0.17
Fox-----	Very limited Water erosion Slope	1.00 0.02	Very limited Water erosion	1.00	Very limited Slope	1.00
745B: Shullsburg-----	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone Depth to bedrock	0.78 0.65

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
745C2: Shullsburg-----	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone	0.50	Somewhat limited Depth to saturated zone Depth to bedrock	0.78 0.65
752C2: Oneco-----	Not limited		Not limited		Not limited	
753B: Massbach-----	Not limited		Not limited		Not limited	
753C2: Massbach-----	Not limited		Not limited		Not limited	
802B: Orthents, loamy----	Not limited		Not limited		Not limited	
864: Pits, quarries-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
905F: NewGlarus-----	Very limited Water erosion Slope	1.00 1.00	Very limited Water erosion Slope	1.00 0.02	Very limited Slope Depth to bedrock	1.00 0.16
Lamoille-----	Very limited Water erosion Slope	1.00 1.00	Very limited Water erosion Slope	1.00 0.02	Very limited Slope	1.00
928D2: NewGlarus-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope Depth to bedrock	0.96 0.06
Palsgrove-----	Very limited Water erosion	1.00	Very limited Water erosion	1.00	Somewhat limited Slope	0.96
1107A: Sawmill-----	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00
3074A: Radford-----	Somewhat limited Depth to saturated zone Flooding	0.44 0.40	Somewhat limited Depth to saturated zone Flooding	0.44 0.40	Very limited Flooding Depth to saturated zone	1.00 0.75
3107A: Sawmill-----	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Depth to saturated zone Ponding Flooding	1.00 1.00 0.40	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3451A: Lawson-----	Somewhat limited		Somewhat limited		Very limited	
	Depth to saturated zone	0.44	Depth to saturated zone	0.44	Flooding	1.00
	Flooding	0.40	Flooding	0.40	Depth to saturated zone	0.75
8070A: Beaucoup-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
					Flooding	0.60
8074A: Radford-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.11	Depth to saturated zone	0.11	Flooding	0.60
					Depth to saturated zone	0.48
8076A: Otter-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8077A: Huntsville-----	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8082A: Millington-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8103A: Houghton-----	Very limited		Very limited		Very limited	
	Gravel content	1.00	Gravel content	1.00	Organic matter content	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	1.00
	Organic matter content	1.00	Organic matter content	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8107A: Sawmill-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
	Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
					Flooding	0.60

Table 13b.--Recreational Development--Continued

Map symbol and soil name	Paths and trails		Off-road motorcycle trails		Golf fairways	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8210A: Lena-----	Very limited		Very limited		Very limited	
	Gravel content	1.00	Gravel content	1.00	Organic matter	1.00
	Depth to	1.00	Depth to	1.00	content	
	saturated zone		saturated zone		Gravel content	1.00
	Organic matter	1.00	Organic matter	1.00	Depth to	1.00
	content		content		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
					Flooding	0.60
8239A: Dorchester-----	Not limited		Not limited		Somewhat limited	
					Flooding	0.60
8415A: Orion-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to	0.44	Depth to	0.44	Depth to	0.75
	saturated zone		saturated zone		saturated zone	
					Flooding	0.60
8451A: Lawson-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to	0.44	Depth to	0.44	Depth to	0.75
	saturated zone		saturated zone		saturated zone	
					Flooding	0.60
8579A: Beavercreek-----	Not limited		Not limited		Somewhat limited	
					Flooding	0.60

Table 14.--Wildlife Habitat

(See text for definitions of terms used in this table. Absence of an entry indicates that no rating is applicable)

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
21B: Pecatonica-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
21C2: Pecatonica-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
22C2: Westville-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
22C3: Westville-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
22D2: Westville-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
29C2: Dubuque-----	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
29D2: Dubuque-----	Fair	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
40C2: Dodgeville-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
40D2: Dodgeville-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
51A: Muscatune-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
51B: Muscatune-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
61A: Atterberry-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
61B: Atterberry-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
67A: Harpster-----	Fair	Fair	Good	Fair	Fair	Good	Good	Fair	Fair	Good.
68A: Sable-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
86A: Osco-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
86B: Osco-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
86C: Osco-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
86C2: Osco-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
87B: Dickinson-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
87C2: Dickinson-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
104A: Virgil-----	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
104B: Virgil-----	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
105A: Batavia-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
105B: Batavia-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
105C: Batavia-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
119C2: Elco-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
134B: Camden-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
134C2: Camden-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
134C3: Camden-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
134D2: Camden-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
148A: Proctor-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
148B: Proctor-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
148C2: Proctor-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
152A: Drummer-----	Fair	Fair	Good	Fair	Fair	Good	Good	Fair	Fair	Good.
198A: Elburn-----	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
198B: Elburn-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
199A: Plano-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
199B: Plano-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
199C2: Plano-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
206A: Thorp-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
219A: Millbrook-----	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
227B: Argyle-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
227C2: Argyle-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
233B: Birkbeck-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
233C2: Birkbeck-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
233D2: Birkbeck-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
242A: Kendall-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
242B: Kendall-----	Good	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor.
243A: St. Charles-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
243B: St. Charles-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
243C2: St. Charles-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
259C2: Assumption-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Fair	Very poor.
272A: Edgington-----	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
278A: Stronghurst-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
279A: Rozetta-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
279B: Rozetta-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280B: Fayette-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280C2: Fayette-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280C3: Fayette-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
280D2: Fayette-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
290C2: Warsaw-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
344A: Harvard-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
344B: Harvard-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
344C2: Harvard-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
361D3: Kidder-----	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
361E2: Kidder-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
363D2: Griswold-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
403D2: Elizabeth-----	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
403F2: Elizabeth-----	Very poor.	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
410B: Woodbine-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
410C2: Woodbine-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
410C3: Woodbine-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
410D2: Woodbine-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
411B: Ashdale-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
411C2: Ashdale-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
412B: Ogle-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
412C2: Ogle-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
414B: Myrtle-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
414C: Myrtle-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
414C2: Myrtle-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
416B: Durand-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
416C2: Durand-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
417C2: Derinda-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
417C3: Derinda-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
417D2: Derinda-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
418C2: Schapville-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
419B: Flagg-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
419C2: Flagg-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
429B: Palsgrove-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
429C2: Palsgrove-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
429D2: Palsgrove-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
506B: Hitt-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
506C2: Hitt-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
546B: Keltner-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
546C2: Keltner-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
547B: Eleroy-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
547C2: Eleroy-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
572B: Loran-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
572C: Loran-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
618C2: Senachwine-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
618C3: Senachwine-----	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
618D2: Senachwine-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
622B: Wyanet-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
622C2: Wyanet-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
656C2: Octagon-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
656D2: Octagon-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
675A: Greenbush-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
675B: Greenbush-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
675C: Greenbush-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
675C2: Greenbush-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
686B: Parkway-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
686C2: Parkway-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
731B: Nasset-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
731C2: Nasset-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
732B: Appleriver-----	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
732C: Appleriver-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
735C2: Casco-----	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
Rodman-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Fox-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
735D2: Casco-----	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
Rodman-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Fox-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
735E2: Casco-----	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Rodman-----	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
Fox-----	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
745B: Shullsburg-----	Good	Good	Fair	Fair	Good	Good	Fair	Good	Fair	Fair.
745C2: Shullsburg-----	Good	Good	Fair	Fair	Good	Good	Fair	Good	Fair	Fair.
752C2: Oneco-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
753B: Massbach-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
753C2: Massbach-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
802B: Orthents, loamy---	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
864. Pits, quarries										
865. Pits, gravel										
905F: NewGlarus-----	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
Lamoille-----	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
928D2: NewGlarus-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Palsgrove-----	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
1107A: Sawmill-----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3074A: Radford-----	Poor	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
3107A: Sawmill-----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
3451A: Lawson-----	Poor	Fair	Fair	Good	Fair	Good	Fair	Fair	Good	Fair.
8070A: Beaucoup-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
8074A: Radford-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
8076A: Otter-----	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.

Table 14.--Wildlife Habitat--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
8077A: Huntsville-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
8082A: Millington-----	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
8103A: Houghton-----	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
8107A: Sawmill-----	Poor	Fair	Fair	Fair	Poor	Good	Good	Fair	Fair	Good.
8210A: Lena-----	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
8239A: Dorchester-----	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
8415A: Orion-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
8451A: Lawson-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
8579A: Beavercreek-----	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.

Table 15a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
21C2: Pecatonica-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
22C2: Westville-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
22C3: Westville-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
22D2: Westville-----	Somewhat limited Slope Shrink-swell	0.96 0.50	Somewhat limited Slope Shrink-swell	0.96 0.50	Very limited Slope Shrink-swell	1.00 0.50
29C2: Dubuque-----	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.35	Very limited Depth to hard bedrock Shrink-swell	1.00 0.50	Somewhat limited Shrink-swell Slope Depth to hard bedrock	0.50 0.50 0.35
29D2: Dubuque-----	Somewhat limited Shrink-swell Slope Depth to hard bedrock	0.50 0.37 0.29	Very limited Depth to hard bedrock Shrink-swell Slope	1.00 0.50 0.37	Very limited Slope Shrink-swell Depth to hard bedrock	1.00 0.50 0.29
40C2: Dodgeville-----	Very limited Shrink-swell Slope	1.00 0.16	Very limited Shrink-swell Depth to soft bedrock Slope	1.00 0.20 0.16	Very limited Shrink-swell Slope	1.00 1.00
40D2: Dodgeville-----	Very limited Shrink-swell Slope	1.00 0.96	Very limited Shrink-swell Slope Depth to soft bedrock	1.00 0.96 0.20	Very limited Slope Shrink-swell	1.00 1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
51A: Muscatune-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to	0.98	Depth to	1.00	Depth to	0.98
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
51B: Muscatune-----	Somewhat limited		Very limited		Somewhat limited	
	Depth to	0.98	Depth to	1.00	Depth to	0.98
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
61A: Atterberry-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
61B: Atterberry-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
67A: Harpster-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
68A: Sable-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86A: Osc-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to	0.15		
			saturated zone			
86B: Osc-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
			Depth to	0.15		
			saturated zone			
86C: Osc-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to	0.15	Shrink-swell	0.50
			saturated zone			
86C2: Osc-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.97
			Depth to	0.15	Shrink-swell	0.50
			saturated zone			

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
87B: Dickinson-----	Not limited		Not limited		Not limited	
87C2: Dickinson-----	Not limited		Not limited		Somewhat limited Slope	0.97
104A: Virgil-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
104B: Virgil-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
105A: Batavia-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
105B: Batavia-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
105C: Batavia-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Slope	0.50 0.12
119C2: Elco-----	Somewhat limited Shrink-swell	0.50	Very limited Shrink-swell Depth to saturated zone	1.00 0.99	Somewhat limited Slope Shrink-swell	0.97 0.50
134B: Camden-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
134C2: Camden-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Slope Shrink-swell	0.97 0.50
134C3: Camden-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Slope Shrink-swell	0.97 0.50
134D2: Camden-----	Somewhat limited Slope Shrink-swell	0.96 0.50	Somewhat limited Slope	0.96	Very limited Slope Shrink-swell	1.00 0.50
148A: Proctor-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
148B: Proctor-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
148C2: Proctor-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
152A: Drummer-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50
198A: Elburn-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
198B: Elburn-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
199A: Plano-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
199B: Plano-----	Somewhat limited Shrink-swell	0.27	Somewhat limited Shrink-swell	0.27	Somewhat limited Shrink-swell	0.27
199C2: Plano-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
206A: Thorp-----	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding Shrink-swell	1.00 1.00 0.50
219A: Millbrook-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50
227B: Argyle-----	Not limited		Not limited		Not limited	
227C2: Argyle-----	Not limited		Not limited		Somewhat limited Slope	0.97

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233B: Birkbeck-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Shrink-swell	0.50
233C2: Birkbeck-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Slope Shrink-swell	0.97 0.50
233D2: Birkbeck-----	Somewhat limited Slope Shrink-swell	0.96 0.50	Somewhat limited Slope Depth to saturated zone	0.96 0.15	Very limited Slope Shrink-swell	1.00 0.50
242A: Kendall-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50
242B: Kendall-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50
243A: St. Charles-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
243B: St. Charles-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
243C2: St. Charles-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
259C2: Assumption-----	Very limited Shrink-swell	1.00	Very limited Shrink-swell Depth to saturated zone	1.00 0.99	Very limited Shrink-swell Slope	1.00 0.97
272A: Edgington-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00
278A: Stronghurst-----	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
279A: Rozetta-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Shrink-swell	0.50
279B: Rozetta-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Shrink-swell	0.50
280B: Fayette-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
280C2: Fayette-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
280C3: Fayette-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
280D2: Fayette-----	Somewhat limited Slope Shrink-swell	0.96 0.50	Somewhat limited Slope Shrink-swell	0.96 0.50	Very limited Slope Shrink-swell	1.00 0.50
290C2: Warsaw-----	Somewhat limited Slope	0.01	Somewhat limited Slope	0.01	Very limited Slope	1.00
344A: Harvard-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
344B: Harvard-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
344C2: Harvard-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
361D3: Kidder-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Slope	0.04	Very limited Slope Shrink-swell	1.00 0.50
361E2: Kidder-----	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope	1.00	Very limited Slope Shrink-swell	1.00 0.50
363D2: Griswold-----	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
403D2: Elizabeth-----	Very limited Depth to hard bedrock Slope	1.00 0.96	Very limited Depth to hard bedrock Slope	1.00 0.96	Very limited Slope Depth to hard bedrock	1.00 1.00
403F2: Elizabeth-----	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00	Very limited Slope Depth to hard bedrock	1.00 1.00
410B: Woodbine-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell	0.50
410C2: Woodbine-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.61 0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
410C3: Woodbine-----	Somewhat limited Shrink-swell Slope	0.50 0.16	Somewhat limited Depth to hard bedrock Shrink-swell Slope	0.99 0.50 0.16	Very limited Slope Shrink-swell	1.00 0.50
410D2: Woodbine-----	Somewhat limited Slope Shrink-swell	0.96 0.50	Somewhat limited Slope Depth to hard bedrock Shrink-swell	0.96 0.77 0.50	Very limited Slope Shrink-swell	1.00 0.50
411B: Ashdale-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.32	Somewhat limited Shrink-swell	0.50
411C2: Ashdale-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.05	Somewhat limited Slope Shrink-swell	0.97 0.50
412B: Ogle-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
412C2: Ogle-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
414B: Myrtle-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
414C: Myrtle-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
414C2: Myrtle-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
416B: Durand-----	Not limited		Not limited		Not limited	
416C2: Durand-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
417C2: Derinda-----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.39	Very limited Depth to saturated zone Depth to soft bedrock Shrink-swell	1.00 0.84 0.50	Somewhat limited Slope Shrink-swell Depth to saturated zone	0.97 0.50 0.39
417C3: Derinda-----	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.39	Very limited Depth to saturated zone Depth to soft bedrock Shrink-swell	1.00 0.84 0.50	Somewhat limited Slope Shrink-swell Depth to saturated zone	0.97 0.50 0.39
417D2: Derinda-----	Somewhat limited Slope Shrink-swell Depth to saturated zone	0.96 0.50 0.39	Very limited Depth to saturated zone Slope Depth to soft bedrock Shrink-swell	1.00 0.96 0.84 0.50	Very limited Slope Shrink-swell Depth to saturated zone	1.00 0.50 0.39
418C2: Schapville-----	Somewhat limited Shrink-swell Slope	0.50 0.01	Somewhat limited Shrink-swell Depth to soft bedrock Slope	0.50 0.15 0.01	Very limited Slope Shrink-swell	1.00 0.50
419B: Flagg-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
419C2: Flagg-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Slope Shrink-swell	0.97 0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
429B: Palsgrove-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
429C2: Palsgrove-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.26	Somewhat limited Slope Shrink-swell	0.97 0.50
429D2: Palsgrove-----	Somewhat limited Shrink-swell Slope	0.50 0.16	Somewhat limited Depth to hard bedrock Shrink-swell Slope	0.54 0.50 0.16	Very limited Slope Shrink-swell	1.00 0.50
506B: Hitt-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.96 0.50	Somewhat limited Shrink-swell	0.50
506C2: Hitt-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.96 0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
546B: Keltner-----	Somewhat limited Shrink-swell	0.50	Very limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell	0.50
546C2: Keltner-----	Somewhat limited Shrink-swell	0.50	Very limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
547B: Eleroy-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell	0.50
547C2: Eleroy-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Somewhat limited Slope Shrink-swell	0.97 0.50
572B: Loran-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
572C: Loran-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Slope Shrink-swell	0.98 0.88 0.50
618C2: Senachwine-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Slope Shrink-swell	0.97 0.50
618C3: Senachwine-----	Not limited		Not limited		Somewhat limited Slope	0.97
618D2: Senachwine-----	Somewhat limited Slope Shrink-swell	0.96 0.50	Somewhat limited Slope	0.96	Very limited Slope Shrink-swell	1.00 0.50
622B: Wyanet-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Shrink-swell	0.50
622C2: Wyanet-----	Somewhat limited Shrink-swell	0.50	Not limited		Somewhat limited Slope Shrink-swell	0.97 0.50
656C2: Octagon-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone	0.99	Somewhat limited Shrink-swell Slope	0.50 0.12
656D2: Octagon-----	Somewhat limited Shrink-swell Slope	0.50 0.04	Somewhat limited Depth to saturated zone Slope	0.99 0.04	Very limited Slope Shrink-swell	1.00 0.50
675A: Greenbush-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Shrink-swell	0.50
675B: Greenbush-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Shrink-swell	0.50
675C: Greenbush-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Slope Shrink-swell	0.97 0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
675C2: Greenbush-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Slope Shrink-swell	0.97 0.50
686B: Parkway-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Shrink-swell	0.50
686C2: Parkway-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to saturated zone	0.50 0.15	Somewhat limited Slope Shrink-swell	0.97 0.50
731B: Nasset-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.18	Somewhat limited Shrink-swell	0.50
731C2: Nasset-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell Depth to hard bedrock	0.50 0.18	Somewhat limited Shrink-swell Slope	0.50 0.50
732B: Appleriver-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50
732C: Appleriver-----	Somewhat limited Depth to saturated zone Shrink-swell	0.98 0.50	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Somewhat limited Depth to saturated zone Slope Shrink-swell	0.98 0.97 0.50
735C2: Casco-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
Rodman-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
Fox-----	Somewhat limited Shrink-swell Slope	0.50 0.16	Somewhat limited Slope	0.16	Very limited Slope Shrink-swell	1.00 0.50
735D2: Casco-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00
Rodman-----	Somewhat limited Slope	0.16	Somewhat limited Slope	0.16	Very limited Slope	1.00

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
735D2: Fox-----	Somewhat limited Shrink-swell Slope	0.50 0.16	Somewhat limited Slope	0.16	Very limited Slope Shrink-swell	1.00 0.50
735E2: Casco-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Rodman-----	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Fox-----	Very limited Slope Shrink-swell	1.00 0.50	Very limited Slope	1.00	Very limited Slope Shrink-swell	1.00 0.50
745B: Shullsburg-----	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Very limited Depth to saturated zone Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50
745C2: Shullsburg-----	Somewhat limited Depth to saturated zone Shrink-swell	0.99 0.50	Very limited Depth to saturated zone Depth to soft bedrock Shrink-swell	1.00 0.64 0.50	Somewhat limited Depth to saturated zone Shrink-swell Slope	0.99 0.50 0.50
752C2: Oneco-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to hard bedrock Shrink-swell	0.99 0.50	Somewhat limited Shrink-swell Slope	0.50 0.50
753B: Massbach-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.61 0.50	Somewhat limited Shrink-swell	0.50
753C2: Massbach-----	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone Shrink-swell	0.61 0.50	Somewhat limited Shrink-swell Slope	0.50 0.50
802B: Orthents, loamy----	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50	Somewhat limited Shrink-swell	0.50
864: Pits, quarries-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
905F:						
NewGlarus-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Depth to hard	1.00	Shrink-swell	0.50
	Depth to hard	0.15	bedrock		Depth to hard	0.15
	bedrock		Shrink-swell	0.50	bedrock	
Lamoille-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
928D2:						
NewGlarus-----	Somewhat limited		Very limited		Very limited	
	Slope	0.96	Depth to hard	1.00	Slope	1.00
	Shrink-swell	0.50	bedrock		Shrink-swell	0.50
	Depth to hard	0.06	Slope	0.96	Depth to hard	0.06
	bedrock		Shrink-swell	0.50	bedrock	
Palsgrove-----	Somewhat limited		Somewhat limited		Very limited	
	Slope	0.96	Slope	0.96	Slope	1.00
	Shrink-swell	0.50	Depth to hard	0.54	Shrink-swell	0.50
			bedrock			
			Shrink-swell	0.50		
1107A:						
Sawmill-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3074A:						
Radford-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to	0.98	Depth to	1.00	Depth to	0.98
	saturated zone		saturated zone		saturated zone	
			Shrink-swell	0.50		
3107A:						
Sawmill-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
3451A:						
Lawson-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to	0.98	Depth to	1.00	Depth to	0.98
	saturated zone		saturated zone		saturated zone	
			Shrink-swell	0.50		
8070A:						
Beaucoup-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Flooding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8074A: Radford-----	Very limited Flooding Depth to saturated zone	1.00 0.81	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 0.81
8076A: Otter-----	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00
8077A: Huntsville-----	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell Depth to saturated zone	1.00 0.50 0.16	Very limited Flooding Shrink-swell	1.00 0.50
8082A: Millington-----	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Ponding Shrink-swell	1.00 1.00 1.00 0.50	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00
8103A: Houghton-----	Very limited Subsidence Flooding Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00 1.00 1.00	Very limited Subsidence Flooding Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00 1.00 1.00	Very limited Subsidence Flooding Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00 1.00 1.00
8107A: Sawmill-----	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 0.50	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 0.50	Very limited Ponding Flooding Depth to saturated zone Shrink-swell	1.00 1.00 1.00 0.50
8210A: Lena-----	Very limited Subsidence Flooding Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00 1.00 1.00	Very limited Subsidence Flooding Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00 1.00 1.00	Very limited Subsidence Flooding Depth to saturated zone Organic matter content Ponding	1.00 1.00 1.00 1.00 1.00
8239A: Dorchester-----	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50	Very limited Flooding Shrink-swell	1.00 0.50

Table 15a.--Building Site Development--Continued

Map symbol and soil name	Dwellings without basements		Dwellings with basements		Small commercial buildings	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8415A: Orion-----	Very limited Flooding Depth to saturated zone	1.00 0.98	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 0.98
8451A: Lawson-----	Very limited Flooding Depth to saturated zone	1.00 0.98	Very limited Flooding Depth to saturated zone Shrink-swell	1.00 1.00 0.50	Very limited Flooding Depth to saturated zone	1.00 0.98
8579A: Beavercreek-----	Very limited Flooding	1.00	Very limited Flooding	1.00	Very limited Flooding	1.00

Table 15b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
21C2: Pecatonica-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
22C2: Westville-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
22C3: Westville-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
22D2: Westville-----	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
29C2: Dubuque-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard	1.00	Depth to bedrock	0.35
	Low strength	1.00	bedrock			
	Shrink-swell	0.50	Too clayey	0.82		
	Depth to hard	0.35	Cutbanks cave	0.10		
	bedrock					
29D2: Dubuque-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard	1.00	Slope	0.37
	Low strength	1.00	bedrock		Depth to bedrock	0.29
	Shrink-swell	0.50	Too clayey	0.82		
	Slope	0.37	Slope	0.37		
	Depth to hard	0.29	Cutbanks cave	0.10		
	bedrock					
40C2: Dodgeville-----	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Too clayey	0.88	Depth to bedrock	0.20
	Shrink-swell	1.00	Depth to soft	0.20	Slope	0.16
	Low strength	1.00	bedrock			
	Slope	0.16	Slope	0.16		
			Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets	Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
40D2: Dodgeville-----	Very limited		Somewhat limited		Somewhat limited
	Frost action	1.00	Slope	0.96	Slope
	Shrink-swell	1.00	Too clayey	0.88	Depth to bedrock
	Low strength	1.00	Depth to soft	0.20	
	Slope	0.96	bedrock		
			Cutbanks cave	0.10	
51A: Muscatune-----	Very limited		Very limited		Somewhat limited
	Frost action	1.00	Depth to	1.00	Depth to
	Low strength	1.00	saturated zone		saturated zone
	Depth to	0.75	Cutbanks cave	0.10	
	saturated zone				
	Shrink-swell	0.50			
51B: Muscatune-----	Very limited		Very limited		Somewhat limited
	Frost action	1.00	Depth to	1.00	Depth to
	Low strength	1.00	saturated zone		saturated zone
	Depth to	0.75	Cutbanks cave	0.10	
	saturated zone				
	Shrink-swell	0.50			
61A: Atterberry-----	Very limited		Very limited		Somewhat limited
	Frost action	1.00	Depth to	1.00	Depth to
	Low strength	1.00	saturated zone		saturated zone
	Depth to	0.94	Cutbanks cave	0.10	
	saturated zone				
	Shrink-swell	0.50			
61B: Atterberry-----	Very limited		Very limited		Somewhat limited
	Frost action	1.00	Depth to	1.00	Depth to
	Low strength	1.00	saturated zone		saturated zone
	Depth to	0.94	Cutbanks cave	0.10	
	saturated zone				
	Shrink-swell	0.50			
67A: Harpster-----	Very limited		Very limited		Very limited
	Depth to	1.00	Depth to	1.00	Depth to
	saturated zone		saturated zone		saturated zone
	Frost action	1.00	Ponding	1.00	Ponding
	Low strength	1.00	Cutbanks cave	0.10	
	Ponding	1.00			
	Shrink-swell	0.50			
68A: Sable-----	Very limited		Very limited		Very limited
	Depth to	1.00	Depth to	1.00	Depth to
	saturated zone		saturated zone		saturated zone
	Frost action	1.00	Ponding	1.00	Ponding
	Low strength	1.00	Cutbanks cave	0.10	
	Ponding	1.00			
	Shrink-swell	0.50			

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86A: Osc-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15 0.10	Not limited	
86B: Osc-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15 0.10	Not limited	
86C: Osc-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15 0.10	Not limited	
86C2: Osc-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15 0.10	Not limited	
87B: Dickinson-----	Somewhat limited Frost action	 0.50	Very limited Cutbanks cave	 1.00	Not limited	
87C2: Dickinson-----	Somewhat limited Frost action	 0.50	Very limited Cutbanks cave	 1.00	Not limited	
104A: Virgil-----	Very limited Frost action Low strength Depth to saturated zone	 1.00 1.00 0.94	Very limited Depth to saturated zone Cutbanks cave	 1.00 0.10	Somewhat limited Depth to saturated zone	0.94
104B: Virgil-----	Very limited Frost action Low strength Depth to saturated zone	 1.00 1.00 0.94	Very limited Depth to saturated zone Cutbanks cave	 1.00 0.10	Somewhat limited Depth to saturated zone	0.94
105A: Batavia-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
105B: Batavia-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
105C: Batavia-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
119C2: Elco-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.99		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
134B: Camden-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
134C2: Camden-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
134C3: Camden-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
134D2: Camden-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Cutbanks cave	1.00	Slope	0.96
	Low strength	1.00	Slope	0.96		
	Slope	0.96				
	Shrink-swell	0.50				
148A: Proctor-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
148B: Proctor-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
148C2: Proctor-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
152A: Drummer-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Cutbanks cave	1.00	Ponding	1.00
	Low strength	1.00	Ponding	1.00		
	Ponding	1.00				
	Shrink-swell	0.50				
198A: Elburn-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	0.10		
	saturated zone					
	Shrink-swell	0.50				
198B: Elburn-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	0.10		
	saturated zone					
	Shrink-swell	0.50				
199A: Plano-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
199B: Plano-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.27				
199C2: Plano-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Cutbanks cave	1.00		
	Low strength	1.00				
	Shrink-swell	0.50				
206A: Thorp-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
	Shrink-swell	0.50				
219A: Millbrook-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.94
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.94	Cutbanks cave	0.10		
	saturated zone					
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets	Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
227B: Argyle-----	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Not limited
227C2: Argyle-----	Somewhat limited Frost action	0.50	Very limited Cutbanks cave	1.00	Not limited
233B: Birkbeck-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	0.15 0.10	Not limited
233C2: Birkbeck-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	0.15 0.10	Not limited
233D2: Birkbeck-----	Very limited Frost action Low strength Slope Shrink-swell	1.00 1.00 0.96 0.50	Somewhat limited Slope Depth to saturated zone Cutbanks cave	0.96 0.15 0.10	Somewhat limited Slope
242A: Kendall-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	1.00 1.00 0.94 0.50	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Depth to saturated zone
242B: Kendall-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	1.00 1.00 0.94 0.50	Very limited Depth to saturated zone Cutbanks cave	1.00 0.10	Somewhat limited Depth to saturated zone
243A: St. Charles-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited
243B: St. Charles-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited
243C2: St. Charles-----	Very limited Frost action Low strength Shrink-swell	1.00 1.00 0.50	Somewhat limited Cutbanks cave	0.10	Not limited

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
259C2: Assumption-----	Very limited Frost action Shrink-swell Low strength	 1.00 1.00 1.00	Somewhat limited Depth to saturated zone Cutbanks cave	 0.99 0.10	Not limited	
272A: Edgington-----	Very limited Ponding Depth to saturated zone Frost action Low strength	 1.00 1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	 1.00 1.00 0.10	Very limited Ponding Depth to saturated zone	 1.00 1.00
278A: Stronghurst-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.94 0.50	Very limited Depth to saturated zone Cutbanks cave	 1.00 0.10	Somewhat limited Depth to saturated zone	 0.94
279A: Rozetta-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15 0.10	Not limited	
279B: Rozetta-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Depth to saturated zone Cutbanks cave	 0.15 0.10	Not limited	
280B: Fayette-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
280C2: Fayette-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
280C3: Fayette-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
280D2: Fayette-----	Very limited Frost action Low strength Slope Shrink-swell	 1.00 1.00 0.96 0.50	Somewhat limited Slope Cutbanks cave	 0.96 0.10	Somewhat limited Slope	 0.96

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets	Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
290C2: Warsaw-----	Somewhat limited Frost action Slope	 0.50 0.01	Very limited Cutbanks cave Slope	 1.00 0.01	Somewhat limited Slope 0.01
344A: Harvard-----	Very limited Frost action Shrink-swell	 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited
344B: Harvard-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited
344C2: Harvard-----	Very limited Frost action Low strength Shrink-swell	 1.00 1.00 0.50	Very limited Cutbanks cave	 1.00	Not limited
361D3: Kidder-----	Somewhat limited Shrink-swell Frost action Slope	 0.50 0.50 0.04	Somewhat limited Cutbanks cave Slope	 0.10 0.04	Somewhat limited Slope 0.04
361E2: Kidder-----	Very limited Slope Shrink-swell Frost action	 1.00 0.50 0.50	Very limited Slope Cutbanks cave	 1.00 0.10	Very limited Slope 1.00
363D2: Griswold-----	Somewhat limited Frost action Low strength Slope	 0.50 0.22 0.04	Very limited Cutbanks cave Slope	 1.00 0.04	Somewhat limited Slope 0.04
403D2: Elizabeth-----	Very limited Depth to hard bedrock Low strength Slope Frost action	 1.00 1.00 0.96 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	 1.00 0.96 0.10	Very limited Droughty Depth to bedrock Slope 0.96
403F2: Elizabeth-----	Very limited Depth to hard bedrock Slope Frost action	 1.00 1.00 0.50	Very limited Depth to hard bedrock Slope Cutbanks cave	 1.00 1.00 0.10	Very limited Slope Depth to bedrock Droughty 0.99
410B: Woodbine-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Depth to hard bedrock Too clayey Cutbanks cave	 0.99 0.12 0.10	Not limited

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets	Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
410C2: Woodbine-----	Very limited		Somewhat limited		Not limited
	Low strength	1.00	Depth to hard	0.61	
	Shrink-swell	0.50	bedrock		
	Frost action	0.50	Too clayey	0.12	
			Cutbanks cave	0.10	
410C3: Woodbine-----	Very limited		Somewhat limited		Somewhat limited
	Low strength	1.00	Depth to hard	0.99	Slope
	Shrink-swell	0.50	bedrock		0.16
	Frost action	0.50	Slope	0.16	
	Slope	0.16	Too clayey	0.12	
			Cutbanks cave	0.10	
410D2: Woodbine-----	Very limited		Somewhat limited		Somewhat limited
	Low strength	1.00	Slope	0.96	Slope
	Slope	0.96	Depth to hard	0.77	0.96
	Shrink-swell	0.50	bedrock		
	Frost action	0.50	Too clayey	0.12	
			Cutbanks cave	0.10	
411B: Ashdale-----	Very limited		Somewhat limited		Not limited
	Frost action	1.00	Too clayey	0.50	
	Low strength	1.00	Depth to hard	0.32	
	Shrink-swell	0.50	bedrock		
			Cutbanks cave	0.10	
411C2: Ashdale-----	Very limited		Somewhat limited		Not limited
	Frost action	1.00	Too clayey	0.50	
	Low strength	1.00	Cutbanks cave	0.10	
	Shrink-swell	0.50	Depth to hard	0.05	
			bedrock		
412B: Ogle-----	Very limited		Somewhat limited		Not limited
	Frost action	1.00	Cutbanks cave	0.10	
	Low strength	1.00			
	Shrink-swell	0.50			
412C2: Ogle-----	Very limited		Somewhat limited		Not limited
	Frost action	1.00	Cutbanks cave	0.10	
	Low strength	1.00			
	Shrink-swell	0.50			
414B: Myrtle-----	Very limited		Somewhat limited		Not limited
	Frost action	1.00	Cutbanks cave	0.10	
	Low strength	1.00			
	Shrink-swell	0.50			
414C: Myrtle-----	Very limited		Somewhat limited		Not limited
	Frost action	1.00	Cutbanks cave	0.10	
	Low strength	1.00			
	Shrink-swell	0.50			

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
414C2: Myrtle-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
416B: Durand-----	Somewhat limited		Somewhat limited		Not limited	
	Frost action	0.50	Cutbanks cave	0.10		
416C2: Durand-----	Somewhat limited		Somewhat limited		Not limited	
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				
417C2: Derinda-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Depth to bedrock	0.84
	Shrink-swell	0.50	saturated zone		Depth to	0.19
	Frost action	0.50	Depth to soft	0.84	saturated zone	
	Depth to	0.19	bedrock			
	saturated zone		Cutbanks cave	0.10		
			Too clayey	0.01		
417C3: Derinda-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Depth to bedrock	0.84
	Shrink-swell	0.50	saturated zone		Depth to	0.19
	Frost action	0.50	Depth to soft	0.84	saturated zone	
	Depth to	0.19	bedrock			
	saturated zone		Cutbanks cave	0.10		
			Too clayey	0.01		
417D2: Derinda-----	Very limited		Very limited		Somewhat limited	
	Low strength	1.00	Depth to	1.00	Slope	0.96
	Slope	0.96	saturated zone		Depth to bedrock	0.84
	Shrink-swell	0.50	Slope	0.96	Depth to	0.19
	Frost action	0.50	Depth to soft	0.84	saturated zone	
	Depth to	0.19	bedrock			
	saturated zone		Cutbanks cave	0.10		
			Too clayey	0.01		
418C2: Schapville-----	Very limited		Somewhat limited		Somewhat limited	
	Low strength	1.00	Depth to soft	0.15	Depth to bedrock	0.16
	Shrink-swell	0.50	bedrock		Slope	0.01
	Frost action	0.50	Cutbanks cave	0.10		
	Slope	0.01	Slope	0.01		
419B: Flagg-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
419C2: Flagg-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
429B: Palsgrove-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Too clayey	0.88		
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
429C2: Palsgrove-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Too clayey	0.88		
	Low strength	1.00	Depth to hard	0.26		
	Shrink-swell	0.50	bedrock			
			Cutbanks cave	0.10		
429D2: Palsgrove-----	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Depth to hard	0.54	Slope	0.16
	Low strength	1.00	bedrock			
	Shrink-swell	0.50	Slope	0.16		
	Slope	0.16	Too clayey	0.12		
			Cutbanks cave	0.10		
506B: Hitt-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Too clayey	0.98		
	Shrink-swell	0.50	Depth to hard	0.96		
	Frost action	0.50	bedrock			
			Cutbanks cave	0.10		
506C2: Hitt-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Too clayey	0.98		
	Shrink-swell	0.50	Depth to hard	0.96		
	Frost action	0.50	bedrock			
			Cutbanks cave	0.10		
546B: Keltner-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to	0.99		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
			Too clayey	0.08		
546C2: Keltner-----	Very limited		Very limited		Not limited	
	Frost action	1.00	Depth to	0.99		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
			Too clayey	0.08		
547B: Eleroy-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.99		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
547C2: Eleroy-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.99		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
572B: Loran-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.75 0.50	Very limited Depth to saturated zone Cutbanks cave Too clayey	 1.00 0.10 0.03	Somewhat limited Depth to saturated zone	 0.75
572C: Loran-----	Very limited Frost action Low strength Depth to saturated zone Shrink-swell	 1.00 1.00 0.75 0.50	Very limited Depth to saturated zone Cutbanks cave Too clayey	 1.00 0.10 0.03	Somewhat limited Depth to saturated zone	 0.75
618C2: Senachwine-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Dense layer Cutbanks cave	 0.50 0.10	Not limited	
618C3: Senachwine-----	Somewhat limited Frost action	 0.50	Somewhat limited Dense layer Cutbanks cave	 0.50 0.10	Somewhat limited Droughty	 0.06
618D2: Senachwine-----	Very limited Low strength Slope Shrink-swell Frost action	 1.00 0.96 0.50 0.50	Somewhat limited Slope Dense layer Cutbanks cave	 0.96 0.50 0.10	Somewhat limited Slope	 0.96
622B: Wyanet-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
622C2: Wyanet-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
656C2: Octagon-----	Very limited Low strength Shrink-swell Frost action	 1.00 0.50 0.50	Somewhat limited Depth to saturated zone Dense layer Cutbanks cave	 0.99 0.50 0.10	Not limited	
656D2: Octagon-----	Very limited Low strength Shrink-swell Frost action Slope	 1.00 0.50 0.50 0.04	Somewhat limited Depth to saturated zone Dense layer Cutbanks cave Slope	 0.99 0.50 0.10 0.04	Somewhat limited Slope	 0.04

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
675A: Greenbush-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.15		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
675B: Greenbush-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.15		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
675C: Greenbush-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.15		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
675C2: Greenbush-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.15		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
686B: Parkway-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.15		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
686C2: Parkway-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.15		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
731B: Nasset-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Too clayey	0.32		
	Low strength	1.00	Depth to hard	0.18		
	Shrink-swell	0.50	bedrock			
			Cutbanks cave	0.10		
731C2: Nasset-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Too clayey	0.32		
	Low strength	1.00	Depth to hard	0.18		
	Shrink-swell	0.50	bedrock			
			Cutbanks cave	0.10		
732B: Appleriver-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	0.10		
	saturated zone		Too clayey	0.03		
	Shrink-swell	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
732C:						
Appleriver-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.75	Cutbanks cave	0.10		
	saturated zone		Too clayey	0.03		
	Shrink-swell	0.50				
735C2:						
Casco-----	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Cutbanks cave	1.00	Droughty	0.23
			Slope	0.16	Slope	0.16
Rodman-----	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Cutbanks cave	1.00	Droughty	0.99
			Slope	0.16	Gravel content	0.17
					Slope	0.16
Fox-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.16
	Frost action	0.50	Slope	0.16		
	Slope	0.16				
735D2:						
Casco-----	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.16	Cutbanks cave	1.00	Droughty	0.23
			Slope	0.16	Slope	0.16
Rodman-----	Somewhat limited		Very limited		Very limited	
	Slope	0.16	Cutbanks cave	1.00	Droughty	0.99
			Slope	0.16	Gravel content	0.17
					Slope	0.16
Fox-----	Somewhat limited		Very limited		Somewhat limited	
	Shrink-swell	0.50	Cutbanks cave	1.00	Slope	0.16
	Frost action	0.50	Slope	0.16		
	Slope	0.16				
735E2:						
Casco-----	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
			Slope	1.00	Droughty	0.45
Rodman-----	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
			Slope	1.00	Droughty	0.99
					Gravel content	0.17
Fox-----	Very limited		Very limited		Very limited	
	Slope	1.00	Cutbanks cave	1.00	Slope	1.00
	Shrink-swell	0.50	Slope	1.00		
	Frost action	0.50				
745B:						
Shullsburg-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.78
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.78	Too clayey	0.88	Depth to bedrock	0.65
	saturated zone		Depth to soft	0.64		
	Shrink-swell	0.50	bedrock			
			Cutbanks cave	0.10		

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
745C2: Shullsburg-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.78
	Low strength	1.00	saturated zone		saturated zone	
	Depth to	0.78	Too clayey	0.88	Depth to bedrock	0.65
	saturated zone		Depth to soft	0.64		
	Shrink-swell	0.50	bedrock			
			Cutbanks cave	0.10		
752C2: Oneco-----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Depth to hard	0.99		
	Shrink-swell	0.50	bedrock			
	Frost action	0.50	Too clayey	0.97		
			Cutbanks cave	0.10		
753B: Massbach-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.61		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
			Too clayey	0.04		
753C2: Massbach-----	Very limited		Somewhat limited		Not limited	
	Frost action	1.00	Depth to	0.61		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
			Too clayey	0.04		
802B: Orthents, loamy----	Very limited		Somewhat limited		Not limited	
	Low strength	1.00	Cutbanks cave	0.10		
	Shrink-swell	0.50				
	Frost action	0.50				
864: Pits, quarries-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
905F: NewGlarus-----	Very limited		Very limited		Very limited	
	Slope	1.00	Depth to hard	1.00	Slope	1.00
	Frost action	1.00	bedrock		Depth to bedrock	0.16
	Low strength	1.00	Slope	1.00		
	Shrink-swell	0.50	Too clayey	0.50		
	Depth to hard	0.15	Cutbanks cave	0.10		
	bedrock					
Lamoille-----	Very limited		Very limited		Very limited	
	Slope	1.00	Slope	1.00	Slope	1.00
	Low strength	1.00	Too clayey	0.12		
	Shrink-swell	0.50	Cutbanks cave	0.10		
	Frost action	0.50				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
928D2: NewGlarus-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to hard	1.00	Slope	0.96
	Low strength	1.00	bedrock		Depth to bedrock	0.06
	Slope	0.96	Slope	0.96		
	Shrink-swell	0.50	Too clayey	0.50		
	Depth to hard bedrock	0.06	Cutbanks cave	0.10		
Palsgrove-----	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Slope	0.96	Slope	0.96
	Low strength	1.00	Too clayey	0.88		
	Slope	0.96	Depth to hard	0.54		
	Shrink-swell	0.50	bedrock			
			Cutbanks cave	0.10		
1107A: Sawmill-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
3074A: Radford-----	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Flooding	1.00
	Flooding	1.00	saturated zone		Depth to	0.75
	Low strength	1.00	Flooding	0.80	saturated zone	
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
3107A: Sawmill-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
	Frost action	1.00	Ponding	1.00	Depth to saturated zone	1.00
	Flooding	1.00	Flooding	0.80	Ponding	1.00
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
3451A: Lawson-----	Very limited		Very limited		Very limited	
	Frost action	1.00	Depth to	1.00	Flooding	1.00
	Flooding	1.00	saturated zone		Depth to	0.75
	Low strength	1.00	Flooding	0.80	saturated zone	
	Depth to saturated zone	0.75	Cutbanks cave	0.10		
8070A: Beaucoup-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8074A: Radford-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Flooding	0.60
	Flooding	1.00	saturated zone		Depth to	0.48
	Low strength	1.00	Flooding	0.60	saturated zone	
	Depth to	0.48	Cutbanks cave	0.10		
	saturated zone					
8076A: Otter-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8077A: Huntsville-----	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Depth to	0.16		
	Low strength	1.00	saturated zone			
	Shrink-swell	0.50	Cutbanks cave	0.10		
8082A: Millington-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Ponding	1.00	Ponding	1.00
	Flooding	1.00	Flooding	0.60	Flooding	0.60
	Low strength	1.00	Cutbanks cave	0.10		
	Ponding	1.00				
8103A: Houghton-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Organic matter	1.00
	saturated zone		saturated zone		content	
	Subsidence	1.00	Organic matter	1.00	Gravel content	1.00
	Frost action	1.00	content		Depth to	1.00
	Flooding	1.00	Ponding	1.00	saturated zone	
	Ponding	1.00	Flooding	0.60	Ponding	1.00
					Flooding	0.60
8107A: Sawmill-----	Very limited		Very limited		Very limited	
	Ponding	1.00	Ponding	1.00	Ponding	1.00
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
8210A: Lena-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Organic matter	1.00
	saturated zone		saturated zone		content	
	Subsidence	1.00	Organic matter	1.00	Gravel content	1.00
	Frost action	1.00	content		Depth to	1.00
	Flooding	1.00	Ponding	1.00	saturated zone	
	Ponding	1.00	Flooding	0.60	Ponding	1.00
					Flooding	0.60

Table 15b.--Building Site Development--Continued

Map symbol and soil name	Local roads and streets		Shallow excavations		Lawns and landscaping	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8239A: Dorchester-----	Very limited		Somewhat limited		Somewhat limited	
	Frost action	1.00	Flooding	0.60	Flooding	0.60
	Flooding	1.00	Cutbanks cave	0.10		
	Low strength	1.00				
	Shrink-swell	0.50				
8415A: Orion-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Flooding	1.00	saturated zone		saturated zone	
	Depth to	0.75	Flooding	0.60	Flooding	0.60
	saturated zone		Cutbanks cave	0.10		
8451A: Lawson-----	Very limited		Very limited		Somewhat limited	
	Frost action	1.00	Depth to	1.00	Depth to	0.75
	Flooding	1.00	saturated zone		saturated zone	
	Depth to	0.75	Flooding	0.60	Flooding	0.60
	saturated zone		Cutbanks cave	0.10		
8579A: Beavercreek-----	Very limited		Somewhat limited		Somewhat limited	
	Flooding	1.00	Flooding	0.60	Flooding	0.60
			Cutbanks cave	0.10		

Table 16a.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
21C2: Pecatonica-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
22C2: Westville-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
22C3: Westville-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
22D2: Westville-----	Somewhat limited Slope Slow water movement	0.96 0.46	Very limited Slope Seepage	1.00 0.53
29C2: Dubuque-----	Very limited Slow water movement Depth to bedrock	1.00 1.00	Very limited Depth to hard bedrock Slope Seepage	1.00 0.92 0.53
29D2: Dubuque-----	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 0.37	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.53
40C2: Dodgeville-----	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 0.16	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.28
40D2: Dodgeville-----	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 0.96	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.28

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
51A: Muscatune-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
51B: Muscatune-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
61A: Atterberry-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
61B: Atterberry-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Slow water movement	0.46	Seepage	0.53
			Slope	0.18
67A: Harpster-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
68A: Sable-----	Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Ponding	1.00	Ponding	1.00
	Slow water movement	0.46	Seepage	0.53
86A: Osco-----	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
	Depth to saturated zone	0.40		
86B: Osco-----	Somewhat limited		Somewhat limited	
	Slow water movement	0.46	Seepage	0.53
	Depth to saturated zone	0.40	Slope	0.18

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
86C: Oско-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Very limited Slope Seepage	1.00 0.53
86C2: Oско-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Very limited Slope Seepage	1.00 0.53
87B: Dickinson-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 0.18
87C2: Dickinson-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage Slope	1.00 1.00
104A: Virgil-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00
104B: Virgil-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Seepage Slope	1.00 1.00 0.18
105A: Batavia-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage	1.00
105B: Batavia-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.32

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
105C: Batavia-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.68
119C2: Elco-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Slope Seepage Depth to saturated zone	1.00 0.53 0.04
134B: Camden-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.18
134C2: Camden-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 1.00
134C3: Camden-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 1.00
134D2: Camden-----	Very limited Seepage, bottom layer Slope Slow water movement	1.00 0.96 0.46	Very limited Slope Seepage	1.00 1.00
148A: Proctor-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage	1.00
148B: Proctor-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.18

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
148C2: Proctor-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 1.00
152A: Drummer-----	Very limited Depth to saturated zone Ponding Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Ponding Seepage	1.00 1.00 0.53
198A: Elburn-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 1.00
198B: Elburn-----	Very limited Depth to saturated zone Seepage, bottom layer Slow water movement	1.00 1.00 0.46	Very limited Depth to saturated zone Seepage Slope	1.00 1.00 0.18
199A: Plano-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage	1.00
199B: Plano-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.18
199C2: Plano-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 1.00

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
206A: Thorp-----	Very limited Slow water movement Depth to saturated zone Seepage, bottom layer Ponding	1.00 1.00 1.00 1.00	Very limited Seepage Depth to saturated zone Ponding	1.00 1.00 1.00
219A: Millbrook-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 0.53
227B: Argyle-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
227C2: Argyle-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
233B: Birkbeck-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Somewhat limited Seepage Slope	0.53 0.18
233C2: Birkbeck-----	Very limited Slow water movement Depth to saturated zone	1.00 0.40	Very limited Slope Seepage	1.00 0.53
233D2: Birkbeck-----	Somewhat limited Slope Slow water movement Depth to saturated zone	0.96 0.46 0.40	Very limited Slope Seepage	1.00 0.53
242A: Kendall-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
242B: Kendall-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage Slope	1.00 0.53 0.08
243A: St. Charles-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage	0.53
243B: St. Charles-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
243C2: St. Charles-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
259C2: Assumption-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Very limited Depth to saturated zone Slope Seepage	1.00 1.00 0.53
272A: Edgington-----	Very limited Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Seepage	1.00 1.00 0.53
278A: Stronghurst-----	Very limited Depth to saturated zone Slow water movement	1.00 0.46	Very limited Depth to saturated zone Seepage	1.00 0.53
279A: Rozetta-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Somewhat limited Seepage	0.53
279B: Rozetta-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Somewhat limited Seepage Slope	0.53 0.18

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
280B: Fayette-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
280C2: Fayette-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
280C3: Fayette-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
280D2: Fayette-----	Somewhat limited Slope Slow water movement	0.96 0.46	Very limited Slope Seepage	1.00 0.53
290C2: Warsaw-----	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.46 0.01	Very limited Seepage Slope	1.00 1.00
344A: Harvard-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage	1.00
344B: Harvard-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Seepage Slope	1.00 0.18
344C2: Harvard-----	Very limited Seepage, bottom layer Slow water movement	1.00 0.46	Very limited Slope Seepage	1.00 1.00
361D3: Kidder-----	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.46 0.04	Very limited Seepage Slope	1.00 1.00

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
361E2: Kidder-----	Very limited Seepage, bottom layer Slope Slow water movement	1.00 1.00 0.46	Very limited Slope Seepage	1.00 1.00
363D2: Griswold-----	Very limited Seepage, bottom layer Slow water movement Slope	1.00 0.46 0.04	Very limited Slope Seepage	1.00 1.00
403D2: Elizabeth-----	Very limited Depth to bedrock Slope	1.00 0.96	Very limited Depth to hard bedrock Slope	1.00 1.00
403F2: Elizabeth-----	Very limited Depth to bedrock Slope	1.00 1.00	Very limited Depth to hard bedrock Slope	1.00 1.00
410B: Woodbine-----	Very limited Slow water movement Depth to bedrock	1.00 1.00	Somewhat limited Depth to hard bedrock Seepage Slope	0.99 0.53 0.18
410C2: Woodbine-----	Very limited Slow water movement Depth to bedrock	1.00 0.86	Very limited Slope Depth to hard bedrock Seepage	1.00 0.61 0.53
410C3: Woodbine-----	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 0.16	Very limited Slope Depth to hard bedrock Seepage	1.00 0.99 0.53
410D2: Woodbine-----	Very limited Slow water movement Slope Depth to bedrock	1.00 0.96 0.91	Very limited Slope Depth to hard bedrock Seepage	1.00 0.77 0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
411B: Ashdale-----	Very limited Slow water movement Depth to bedrock	1.00 0.73	Somewhat limited Seepage Depth to hard bedrock Slope	0.53 0.32 0.18
411C2: Ashdale-----	Very limited Slow water movement Depth to bedrock	1.00 0.47	Very limited Slope Seepage Depth to hard bedrock	1.00 0.53 0.05
412B: Ogle-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
412C2: Ogle-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
414B: Myrtle-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
414C: Myrtle-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
414C2: Myrtle-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
416B: Durand-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
416C2: Durand-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
417C2: Derinda-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock	1.00 1.00 1.00	Very limited Depth to soft bedrock Depth to saturated zone Slope	1.00 1.00 1.00

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
417C3: Derinda-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock	1.00 1.00 1.00	Very limited Depth to soft bedrock Depth to saturated zone Slope	1.00 1.00 1.00
417D2: Derinda-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock Slope	1.00 1.00 1.00 0.96	Very limited Depth to soft bedrock Slope Depth to saturated zone	1.00 1.00 1.00
418C2: Schapville-----	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 0.01	Very limited Depth to soft bedrock Slope Seepage	1.00 1.00 0.53
419B: Flagg-----	Somewhat limited Slow water movement	0.46	Somewhat limited Seepage Slope	0.53 0.18
419C2: Flagg-----	Somewhat limited Slow water movement	0.46	Very limited Slope Seepage	1.00 0.53
429B: Palsgrove-----	Very limited Slow water movement Depth to bedrock	1.00 0.30	Somewhat limited Seepage Slope	0.53 0.18
429C2: Palsgrove-----	Very limited Slow water movement Depth to bedrock	1.00 0.69	Very limited Slope Seepage Depth to hard bedrock	1.00 0.53 0.26
429D2: Palsgrove-----	Very limited Slow water movement Depth to bedrock Slope	1.00 0.83 0.16	Very limited Slope Depth to hard bedrock Seepage	1.00 0.54 0.53
506B: Hitt-----	Very limited Slow water movement Depth to bedrock	1.00 0.99	Somewhat limited Depth to hard bedrock Seepage Slope	0.96 0.53 0.18

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
506C2: Hitt-----	Very limited Slow water movement Depth to bedrock	1.00 0.99	Very limited Slope Depth to hard bedrock Seepage	1.00 0.96 0.53
546B: Keltner-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock	1.00 1.00 1.00	Somewhat limited Depth to soft bedrock Seepage Depth to saturated zone Slope	1.00 0.53 0.19 0.18
546C2: Keltner-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock	1.00 1.00 0.98	Very limited Slope Depth to soft bedrock Seepage Depth to saturated zone	1.00 0.93 0.53 0.19
547B: Eleroy-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock	1.00 1.00 0.99	Somewhat limited Depth to soft bedrock Seepage Slope Depth to saturated zone	0.96 0.53 0.18 0.04
547C2: Eleroy-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock	1.00 1.00 0.69	Very limited Slope Seepage Depth to soft bedrock Depth to saturated zone	1.00 0.53 0.26 0.04
572B: Loran-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock	1.00 1.00 0.73	Very limited Depth to saturated zone Seepage Depth to soft bedrock Slope	1.00 0.53 0.32 0.18
572C: Loran-----	Very limited Slow water movement Depth to saturated zone Depth to bedrock	1.00 1.00 1.00	Very limited Slope Depth to saturated zone Depth to soft bedrock Seepage	1.00 1.00 1.00 0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoons		
	Rating class and limiting features	Value	Rating class and limiting features	Value
618C2: Senachwine-----	Very limited Slow water movement	1.00	Very limited Slope Seepage	1.00 0.53
618C3: Senachwine-----	Very limited Slow water movement	1.00	Very limited Slope	1.00
618D2: Senachwine-----	Very limited Slow water movement Slope	1.00 0.96	Very limited Slope Seepage	1.00 0.53
622B: Wyanet-----	Very limited Slow water movement	1.00	Somewhat limited Slope	0.18
622C2: Wyanet-----	Very limited Slow water movement	1.00	Very limited Slope	1.00
656C2: Octagon-----	Very limited Depth to saturated zone Slow water movement	1.00 1.00	Somewhat limited Slope Seepage Depth to saturated zone	0.68 0.53 0.04
656D2: Octagon-----	Very limited Depth to saturated zone Slow water movement Slope	1.00 1.00 0.04	Very limited Slope Seepage Depth to saturated zone	1.00 0.53 0.04
675A: Greenbush-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Somewhat limited Seepage	0.53
675B: Greenbush-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Somewhat limited Seepage Slope	0.53 0.18
675C: Greenbush-----	Somewhat limited Slow water movement Depth to saturated zone	0.46 0.40	Very limited Slope Seepage	1.00 0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
675C2: Greenbush-----	Somewhat limited		Very limited	
	Slow water	0.46	Slope	1.00
	movement		Seepage	0.53
	Depth to	0.40		
	saturated zone			
686B: Parkway-----	Somewhat limited		Somewhat limited	
	Slow water	0.46	Seepage	0.53
	movement		Slope	0.18
	Depth to	0.40		
	saturated zone			
686C2: Parkway-----	Somewhat limited		Very limited	
	Slow water	0.46	Slope	1.00
	movement		Seepage	0.53
	Depth to	0.40		
	saturated zone			
731B: Nasset-----	Very limited		Somewhat limited	
	Slow water	1.00	Seepage	0.53
	movement		Depth to hard	0.18
	Depth to bedrock	0.63	bedrock	
			Slope	0.08
731C2: Nasset-----	Very limited		Somewhat limited	
	Slow water	1.00	Slope	0.92
	movement		Seepage	0.53
	Depth to bedrock	0.63	Depth to hard	0.18
			bedrock	
732B: Appleriver-----	Very limited		Very limited	
	Slow water	1.00	Depth to	1.00
	movement		saturated zone	
	Depth to	1.00	Seepage	0.53
	saturated zone		Slope	0.18
	Depth to bedrock	0.36	Depth to soft	0.01
			bedrock	
732C: Appleriver-----	Very limited		Very limited	
	Slow water	1.00	Slope	1.00
	movement		Depth to	1.00
	Depth to	1.00	saturated zone	
	saturated zone		Seepage	0.53
	Depth to bedrock	0.36	Depth to soft	0.01
			bedrock	
735C2: Casco-----	Very limited		Very limited	
	Filtering	1.00	Slope	1.00
	capacity		Seepage	1.00
	Seepage, bottom	1.00		
	layer			
	Slope	0.16		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
735C2:				
Rodman-----	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slope	0.16		
Fox-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
	Slow water movement	0.46	Seepage	1.00
	Slope	0.16		
735D2:				
Casco-----	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slope	0.16		
Rodman-----	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slope	0.16		
Fox-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
	Slow water movement	0.46	Seepage	1.00
	Slope	0.16		
735E2:				
Casco-----	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slope	1.00		
Rodman-----	Very limited		Very limited	
	Filtering capacity	1.00	Slope	1.00
	Seepage, bottom layer	1.00	Seepage	1.00
	Slope	1.00		
Fox-----	Very limited		Very limited	
	Seepage, bottom layer	1.00	Slope	1.00
	Slope	1.00	Seepage	1.00
	Slow water movement	0.46		

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
745B: Shullsburg-----	Very limited		Very limited	
	Slow water movement	1.00	Depth to soft bedrock	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Slope	0.18
745C2: Shullsburg-----	Very limited		Very limited	
	Slow water movement	1.00	Depth to soft bedrock	1.00
	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Slope	0.92
752C2: Oneco-----	Very limited		Somewhat limited	
	Slow water movement	1.00	Depth to hard bedrock	0.99
	Depth to bedrock	1.00	Slope	0.92
			Seepage	0.53
753B: Massbach-----	Very limited		Somewhat limited	
	Slow water movement	1.00	Depth to soft bedrock	0.77
	Depth to saturated zone	1.00	Depth to saturated zone	0.71
	Depth to bedrock	0.91	Seepage	0.53
			Slope	0.08
753C2: Massbach-----	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.92
	Depth to saturated zone	1.00	Depth to soft bedrock	0.77
	Depth to bedrock	0.91	Depth to saturated zone	0.71
			Seepage	0.53
802B: Orthents, loamy----	Very limited		Somewhat limited	
	Slow water movement	1.00	Slope	0.32
864: Pits, quarries-----	Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated	
905F: NewGlarus-----	Very limited		Very limited	
	Slow water movement	1.00	Depth to hard bedrock	1.00
	Slope	1.00	Slope	1.00
	Depth to bedrock	1.00	Seepage	0.28

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
905F: Lamoille-----	Very limited Slope Slow water movement	1.00 1.00	Very limited Slope	1.00
928D2: NewGlarus-----	Very limited Slow water movement Depth to bedrock Slope	1.00 1.00 0.96	Very limited Depth to hard bedrock Slope Seepage	1.00 1.00 0.28
Palsgrove-----	Very limited Slow water movement Slope Depth to bedrock	1.00 0.96 0.83	Very limited Slope Depth to hard bedrock Seepage	1.00 0.54 0.53
1107A: Sawmill-----	Very limited Flooding Depth to saturated zone Ponding Slow water movement	1.00 1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Ponding Seepage	1.00 1.00 1.00 0.53
3074A: Radford-----	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
3107A: Sawmill-----	Very limited Flooding Depth to saturated zone Ponding Slow water movement	1.00 1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Ponding Seepage	1.00 1.00 1.00 0.53
3451A: Lawson-----	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
8070A: Beaucoup-----	Very limited Flooding Depth to saturated zone Slow water movement Ponding	1.00 1.00 1.00 1.00	Very limited Flooding Depth to saturated zone Ponding	1.00 1.00 1.00

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8074A: Radford-----	Very limited Flooding Depth to saturated zone Slow water movement	1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	1.00 1.00 0.53
8076A: Otter-----	Very limited Flooding Depth to saturated zone Ponding Slow water movement	1.00 1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Ponding Seepage	1.00 1.00 1.00 0.53
8077A: Huntsville-----	Very limited Flooding Slow water movement Depth to saturated zone	1.00 0.46 0.43	Very limited Flooding Seepage	1.00 0.53
8082A: Millington-----	Very limited Flooding Depth to saturated zone Ponding Slow water movement	1.00 1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Ponding Seepage	1.00 1.00 1.00 0.53
8103A: Houghton-----	Very limited Flooding Depth to saturated zone Subsidence Seepage, bottom layer Ponding	1.00 1.00 1.00 1.00 1.00	Very limited Flooding Organic matter content Depth to saturated zone Seepage Ponding	1.00 1.00 1.00 1.00 1.00
8107A: Sawmill-----	Very limited Flooding Ponding Depth to saturated zone Slow water movement	1.00 1.00 1.00 0.46	Very limited Ponding Flooding Depth to saturated zone Seepage	1.00 1.00 1.00 0.53

Table 16a.--Sanitary Facilities--Continued

Map symbol and soil name	Septic tank absorption fields		Sewage lagoons	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8210A: Lena-----	Very limited Flooding Depth to saturated zone Subsidence Seepage, bottom layer Ponding	 1.00 1.00 1.00 1.00 1.00	Very limited Flooding Organic matter content Seepage Depth to saturated zone Ponding	 1.00 1.00 1.00 1.00 1.00
8239A: Dorchester-----	Very limited Flooding Slow water movement	 1.00 0.46	Very limited Flooding Seepage	 1.00 0.53
8415A: Orion-----	Very limited Flooding Depth to saturated zone Slow water movement	 1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	 1.00 1.00 0.53
8451A: Lawson-----	Very limited Flooding Depth to saturated zone Slow water movement	 1.00 1.00 0.46	Very limited Flooding Depth to saturated zone Seepage	 1.00 1.00 0.53
8579A: Beavercreek-----	Very limited Flooding Seepage, bottom layer	 1.00 1.00	Very limited Flooding Seepage	 1.00 1.00

Table 16b.--Sanitary Facilities

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Not limited		Not limited		Not limited	
21C2: Pecatonica-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
22C2: Westville-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
22C3: Westville-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
22D2: Westville-----	Somewhat limited Slope Too clayey	0.96 0.50	Somewhat limited Slope	0.96	Somewhat limited Slope Too clayey	0.96 0.50
29C2: Dubuque-----	Very limited Depth to bedrock Too clayey	1.00 0.50	Very limited Depth to bedrock	1.00	Very limited Depth to bedrock Too clayey	1.00 0.50
29D2: Dubuque-----	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.37	Very limited Depth to bedrock Slope	1.00 0.37	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.37
40C2: Dodgeville-----	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.16	Very limited Depth to bedrock Slope	1.00 0.16	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.16
40D2: Dodgeville-----	Very limited Depth to bedrock Slope Too clayey	1.00 0.96 0.50	Very limited Depth to bedrock Slope	1.00 0.96	Very limited Depth to bedrock Slope Too clayey	1.00 0.96 0.50
51A: Muscatune-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
51B: Muscatune-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
61A: Atterberry-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
61B: Atterberry-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
67A: Harpster-----	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding	1.00 1.00
68A: Sable-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50
86A: Osco-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
86B: Osco-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
86C: Osco-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
86C2: Osco-----	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Not limited	
87B: Dickinson-----	Very limited Seepage, bottom layer Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00 1.00
87C2: Dickinson-----	Very limited Seepage, bottom layer Too sandy	1.00 1.00	Very limited Seepage	1.00	Very limited Too sandy Seepage	1.00 1.00

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
104A: Virgil-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Seepage, bottom	1.00			Too clayey	0.50
	layer					
	Too clayey	0.50				
104B: Virgil-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Seepage, bottom	1.00			Too clayey	0.50
	layer					
	Too clayey	0.50				
105A: Batavia-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom	1.00			Too clayey	0.50
	layer					
	Too clayey	0.50				
105B: Batavia-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom	1.00			Too clayey	0.50
	layer					
	Too clayey	0.50				
105C: Batavia-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom	1.00			Too clayey	0.50
	layer					
	Too clayey	0.50				
119C2: Elco-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to	0.68	Depth to	0.04	Too clayey	0.50
	saturated zone		saturated zone		Depth to	0.24
	Too clayey	0.50			saturated zone	
134B: Camden-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom	1.00			Too clayey	0.50
	layer				Seepage	0.22
134C2: Camden-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom	1.00			Too sandy	0.50
	layer				Too clayey	0.50
	Too sandy	0.50			Seepage	0.22
134C3: Camden-----	Very limited		Not limited		Somewhat limited	
	Seepage, bottom	1.00			Too clayey	0.50
	layer				Seepage	0.22
134D2: Camden-----	Very limited		Somewhat limited		Somewhat limited	
	Seepage, bottom	1.00	Slope	0.96	Slope	0.96
	layer				Too clayey	0.50
	Slope	0.96			Seepage	0.22

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
148A: Proctor-----	Very limited Seepage, bottom layer	1.00	Not limited		Somewhat limited Too clayey Seepage	0.50 0.22
148B: Proctor-----	Very limited Seepage, bottom layer	1.00	Very limited Seepage	1.00	Somewhat limited Seepage	0.22
148C2: Proctor-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Very limited Seepage	1.00	Somewhat limited Too clayey	0.50
152A: Drummer-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50
198A: Elburn-----	Very limited Depth to saturated zone Seepage, bottom layer Too clayey	1.00 1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
198B: Elburn-----	Very limited Depth to saturated zone Seepage, bottom layer Too clayey	1.00 1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
199A: Plano-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
199B: Plano-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
199C2: Plano-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
206A: Thorp-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Seepage, bottom	1.00	Ponding	1.00	Ponding	1.00
	layer				Too clayey	0.50
	Ponding	1.00				
	Too clayey	0.50				
219A: Millbrook-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Too clayey	0.50			Too clayey	0.50
227B: Argyle-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
227C2: Argyle-----	Not limited		Not limited		Not limited	
233B: Birkbeck-----	Very limited		Very limited		Somewhat limited	
	Depth to	1.00	Depth to	1.00	Too clayey	0.50
	saturated zone		saturated zone			
	Too clayey	0.50				
233C2: Birkbeck-----	Very limited		Very limited		Somewhat limited	
	Depth to	1.00	Depth to	1.00	Too clayey	0.50
	saturated zone		saturated zone			
	Too clayey	0.50				
233D2: Birkbeck-----	Very limited		Very limited		Somewhat limited	
	Depth to	1.00	Depth to	1.00	Slope	0.96
	saturated zone		saturated zone			
	Slope	0.96	Slope	0.96		
242A: Kendall-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Too clayey	0.50			Too clayey	0.50
242B: Kendall-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to	1.00
	saturated zone		saturated zone		saturated zone	
	Too clayey	0.50			Too clayey	0.50
243A: St. Charles-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
243B: St. Charles-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
243C2: St. Charles-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
259C2: Assumption-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey Depth to saturated zone	0.50 0.24
272A: Edgington-----	Very limited Depth to saturated zone Ponding Too clayey	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Depth to saturated zone Too clayey	1.00 1.00 0.50
278A: Stronghurst-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone Too clayey	1.00 0.50
279A: Rozetta-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
279B: Rozetta-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
280B: Fayette-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
280C2: Fayette-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
280C3: Fayette-----	Somewhat limited Too clayey	0.50	Not limited		Somewhat limited Too clayey	0.50
280D2: Fayette-----	Somewhat limited Slope Too clayey	0.96 0.50	Somewhat limited Slope	0.96	Somewhat limited Slope Too clayey	0.96 0.50
290C2: Warsaw-----	Very limited Seepage, bottom layer Too sandy Slope	1.00 1.00 0.01	Very limited Seepage Slope	1.00 0.01	Very limited Too sandy Seepage Gravel content Slope	1.00 1.00 0.51 0.01

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
344A: Harvard-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey Seepage	0.50 0.22
344B: Harvard-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
344C2: Harvard-----	Very limited Seepage, bottom layer Too clayey	1.00 0.50	Not limited		Somewhat limited Too clayey	0.50
361D3: Kidder-----	Very limited Seepage, bottom layer Slope	1.00 0.04	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage Slope	0.52 0.04
361E2: Kidder-----	Very limited Seepage, bottom layer Slope	1.00 1.00	Very limited Seepage Slope	1.00 1.00	Very limited Slope Seepage	1.00 0.52
363D2: Griswold-----	Very limited Seepage, bottom layer Slope	1.00 0.04	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage Slope	0.22 0.04
403D2: Elizabeth-----	Very limited Depth to bedrock Slope	1.00 0.96	Very limited Depth to bedrock Slope	1.00 0.96	Very limited Depth to bedrock Slope	1.00 0.96
403F2: Elizabeth-----	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Depth to bedrock Slope	1.00 1.00
410B: Woodbine-----	Very limited Depth to bedrock Too clayey	1.00 0.50	Somewhat limited Depth to bedrock	0.99	Somewhat limited Depth to bedrock Too clayey	0.99 0.50
410C2: Woodbine-----	Very limited Depth to bedrock Too clayey	1.00 0.50	Somewhat limited Depth to bedrock	0.61	Somewhat limited Depth to bedrock Too clayey	0.61 0.50
410C3: Woodbine-----	Very limited Depth to bedrock Too clayey Slope	1.00 0.50 0.16	Somewhat limited Depth to bedrock Slope	0.99 0.16	Somewhat limited Depth to bedrock Too clayey Slope	0.99 0.50 0.16

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
410D2: Woodbine-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to bedrock	0.77	Depth to bedrock	0.77
	Too clayey	0.50			Too clayey	0.50
411B: Ashdale-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.32	Too clayey	0.50
	Too clayey	0.50			Depth to bedrock	0.32
411C2: Ashdale-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.05	Too clayey	0.50
	Too clayey	0.50			Depth to bedrock	0.05
412B: Ogle-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
412C2: Ogle-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
414B: Myrtle-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
414C: Myrtle-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
414C2: Myrtle-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
416B: Durand-----	Not limited		Not limited		Not limited	
416C2: Durand-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
417C2: Derinda-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to bedrock	1.00
	saturated zone		saturated zone		Depth to	0.86
	Depth to bedrock	1.00	Depth to bedrock	1.00	saturated zone	
	Too clayey	0.50			Too clayey	0.50
417C3: Derinda-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to bedrock	1.00
	saturated zone		saturated zone		Depth to	0.86
	Depth to bedrock	1.00	Depth to bedrock	1.00	saturated zone	
	Too clayey	0.50			Too clayey	0.50

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
417D2: Derinda-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Depth to bedrock	1.00
	saturated zone		saturated zone		Slope	0.96
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to	0.86
	Slope	0.96	Slope	0.96	saturated zone	
	Too clayey	0.50			Too clayey	0.50
418C2: Schapville-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50	Slope	0.01	Too clayey	0.50
	Slope	0.01			Slope	0.01
419B: Flagg-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
419C2: Flagg-----	Somewhat limited		Not limited		Somewhat limited	
	Too clayey	0.50			Too clayey	0.50
429B: Palsgrove-----	Very limited		Not limited		Somewhat limited	
	Depth to bedrock	1.00			Too clayey	0.50
	Too clayey	0.50				
429C2: Palsgrove-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.26	Too clayey	0.50
	Too clayey	0.50			Depth to bedrock	0.26
429D2: Palsgrove-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.54	Depth to bedrock	0.54
	Too clayey	0.50	Slope	0.16	Too clayey	0.50
	Slope	0.16			Slope	0.16
506B: Hitt-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.96	Depth to bedrock	0.96
	Too clayey	0.50			Too clayey	0.50
506C2: Hitt-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.96	Depth to bedrock	0.96
	Too clayey	0.50			Too clayey	0.50
546B: Keltner-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Depth to	0.86	Depth to	0.19	Too clayey	0.50
	saturated zone		saturated zone		Depth to	0.47
	Too clayey	0.50			saturated zone	

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
546C2: Keltner-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.94	Depth to bedrock	0.94
	Depth to saturated zone	0.86	Depth to saturated zone	0.19	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.47
547B: Eleroy-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.96	Depth to bedrock	0.96
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Too clayey	0.50
	Too clayey	0.50			Depth to saturated zone	0.24
547C2: Eleroy-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Depth to bedrock	0.26	Too clayey	0.50
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to bedrock	0.26
	Too clayey	0.50			Depth to saturated zone	0.24
572B: Loran-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Depth to bedrock	0.32	Too clayey	0.50
	Too clayey	0.50			Depth to bedrock	0.32
572C: Loran-----	Very limited		Very limited		Very limited	
	Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Too clayey	0.50			Too clayey	0.50
618C2: Senachwine-----	Not limited		Not limited		Not limited	
618C3: Senachwine-----	Not limited		Not limited		Not limited	
618D2: Senachwine-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Slope	0.96	Slope	0.96	Slope	0.96
622B: Wyanet-----	Not limited		Not limited		Not limited	
622C2: Wyanet-----	Not limited		Not limited		Not limited	
656C2: Octagon-----	Somewhat limited		Somewhat limited		Somewhat limited	
	Depth to saturated zone	0.68	Depth to saturated zone	0.04	Depth to saturated zone	0.24

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
656D2: Octagon-----	Somewhat limited Depth to saturated zone Slope	0.68 0.04	Somewhat limited Slope Depth to saturated zone	0.04 0.04	Somewhat limited Depth to saturated zone Slope	0.24 0.04
675A: Greenbush-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
675B: Greenbush-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
675C: Greenbush-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
675C2: Greenbush-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
686B: Parkway-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
686C2: Parkway-----	Very limited Depth to saturated zone Too clayey	1.00 0.50	Very limited Depth to saturated zone	1.00	Somewhat limited Too clayey	0.50
731B: Nasset-----	Very limited Depth to bedrock Too clayey	1.00 0.50	Somewhat limited Depth to bedrock	0.18	Somewhat limited Too clayey Depth to bedrock	0.50 0.18
731C2: Nasset-----	Very limited Depth to bedrock Too clayey	1.00 0.50	Somewhat limited Depth to bedrock	0.18	Somewhat limited Too clayey Depth to bedrock	0.50 0.18
732B: Appleriver-----	Very limited Depth to saturated zone Depth to bedrock Too clayey	1.00 1.00 1.00	Very limited Depth to saturated zone Depth to bedrock	1.00 0.01	Very limited Too clayey Depth to saturated zone Depth to bedrock	1.00 1.00 0.01

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
732C: Appleriver-----	Very limited		Very limited		Very limited	
	Depth to	1.00	Depth to	1.00	Too clayey	1.00
	saturated zone		saturated zone		Depth to	1.00
	Depth to bedrock	1.00	Depth to bedrock	0.01	saturated zone	
	Too clayey	1.00			Depth to bedrock	0.01
735C2: Casco-----	Very limited		Very limited		Very limited	
	Seepage, bottom	1.00	Seepage	1.00	Too sandy	1.00
	layer		Slope	0.16	Seepage	1.00
	Too sandy	1.00			Gravel content	0.81
	Slope	0.16			Slope	0.16
Rodman-----	Very limited		Very limited		Very limited	
	Seepage, bottom	1.00	Seepage	1.00	Too sandy	1.00
	layer		Slope	0.16	Seepage	1.00
	Too sandy	1.00			Gravel content	0.97
	Slope	0.16			Slope	0.16
Fox-----	Very limited		Very limited		Very limited	
	Seepage, bottom	1.00	Seepage	1.00	Too sandy	1.00
	layer		Slope	0.16	Seepage	1.00
	Too sandy	1.00			Slope	0.16
	Slope	0.16				
735D2: Casco-----	Very limited		Very limited		Very limited	
	Seepage, bottom	1.00	Seepage	1.00	Too sandy	1.00
	layer		Slope	0.16	Seepage	1.00
	Too sandy	1.00			Gravel content	0.81
	Slope	0.16			Slope	0.16
Rodman-----	Very limited		Very limited		Very limited	
	Seepage, bottom	1.00	Seepage	1.00	Too sandy	1.00
	layer		Slope	0.16	Seepage	1.00
	Too sandy	1.00			Gravel content	0.97
	Slope	0.16			Slope	0.16
Fox-----	Very limited		Very limited		Very limited	
	Seepage, bottom	1.00	Seepage	1.00	Too sandy	1.00
	layer		Slope	0.16	Seepage	1.00
	Too sandy	1.00			Slope	0.16
	Slope	0.16				
735E2: Casco-----	Very limited		Very limited		Very limited	
	Seepage, bottom	1.00	Seepage	1.00	Too sandy	1.00
	layer		Slope	1.00	Seepage	1.00
	Too sandy	1.00			Slope	1.00
	Slope	1.00			Gravel content	0.86
Rodman-----	Very limited		Very limited		Very limited	
	Seepage, bottom	1.00	Seepage	1.00	Too sandy	1.00
	layer		Slope	1.00	Seepage	1.00
	Too sandy	1.00			Slope	1.00
	Slope	1.00			Gravel content	0.97

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
735E2: Fox-----	Very limited Seepage, bottom layer Too sandy Slope	1.00 1.00 1.00 1.00	Very limited Seepage Slope	1.00 1.00	Very limited Too sandy Seepage Slope	1.00 1.00 1.00
745B: Shullsburg-----	Very limited Depth to saturated zone Depth to bedrock Too clayey	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Depth to bedrock	1.00 1.00	Very limited Depth to saturated zone Depth to bedrock Too clayey	1.00 1.00 1.00 0.50
745C2: Shullsburg-----	Very limited Depth to saturated zone Depth to bedrock Too clayey	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Depth to bedrock	1.00 1.00	Very limited Depth to saturated zone Depth to bedrock Too clayey	1.00 1.00 1.00 0.50
752C2: Oneco-----	Very limited Depth to bedrock Too clayey	1.00 0.50	Somewhat limited Depth to bedrock	0.99	Somewhat limited Depth to bedrock Too clayey	0.99 0.50
753B: Massbach-----	Very limited Depth to saturated zone Depth to bedrock Too clayey	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Depth to bedrock	1.00 0.77	Somewhat limited Depth to bedrock Too clayey	0.77 0.50
753C2: Massbach-----	Very limited Depth to saturated zone Depth to bedrock Too clayey	1.00 1.00 1.00 0.50	Very limited Depth to saturated zone Depth to bedrock	1.00 0.77	Somewhat limited Depth to bedrock Too clayey	0.77 0.50
802B: Orthents, loamy----	Not limited		Not limited		Not limited	
864: Pits, quarries-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
905F: NewGlarus-----	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 1.00 0.50	Very limited Slope Depth to bedrock	1.00 1.00	Very limited Slope Depth to bedrock Too clayey	1.00 1.00 0.50
Lamoille-----	Very limited Slope Too clayey	1.00 1.00	Very limited Slope	1.00	Very limited Slope Too clayey Hard to compact Gravel content	1.00 1.00 1.00 0.12

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
928D2: NewGlarus-----	Very limited		Very limited		Very limited	
	Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
	Slope	0.96	Slope	0.96	Slope	0.96
	Too clayey	0.50			Too clayey	0.50
Palsgrove-----	Very limited		Somewhat limited		Somewhat limited	
	Depth to bedrock	1.00	Slope	0.96	Slope	0.96
	Slope	0.96	Depth to bedrock	0.54	Depth to bedrock	0.54
	Too clayey	0.50			Too clayey	0.50
1107A: Sawmill-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
3074A: Radford-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Too clayey	0.50
	Too clayey	0.50				
3107A: Sawmill-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
3451A: Lawson-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone			
8070A: Beaucoup-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Ponding	1.00
	Ponding	1.00	Ponding	1.00	Too clayey	0.50
	Too clayey	0.50				
8074A: Radford-----	Very limited		Very limited		Somewhat limited	
	Flooding	1.00	Flooding	1.00	Depth to	0.96
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Too clayey	0.50
	Too clayey	0.50				

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8076A: Otter-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Ponding	1.00
	Ponding	1.00	Ponding	1.00		
8077A: Huntsville-----	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
	Depth to	1.00	Depth to	1.00		
	saturated zone		saturated zone			
8082A: Millington-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Ponding	1.00
	Ponding	1.00	Ponding	1.00		
8103A: Houghton-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Organic matter	1.00
	Organic matter	1.00	Seepage	1.00	content	
	content		Ponding	1.00	Ponding	1.00
	Seepage, bottom	1.00			Seepage	0.16
	layer					
	Ponding	1.00				
8107A: Sawmill-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Ponding	1.00
	Depth to	1.00	Ponding	1.00	Depth to	1.00
	saturated zone		Depth to	1.00	saturated zone	
	Ponding	1.00	saturated zone		Too clayey	0.50
	Too clayey	0.50				
8210A: Lena-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone		Organic matter	1.00
	Organic matter	1.00	Seepage	1.00	content	
	content		Ponding	1.00	Ponding	1.00
	Seepage, bottom	1.00			Seepage	0.52
	layer					
	Ponding	1.00				
8239A: Dorchester-----	Very limited		Very limited		Not limited	
	Flooding	1.00	Flooding	1.00		
8415A: Orion-----	Very limited		Very limited		Very limited	
	Flooding	1.00	Flooding	1.00	Depth to	1.00
	Depth to	1.00	Depth to	1.00	saturated zone	
	saturated zone		saturated zone			

Table 16b.--Sanitary Facilities--Continued

Map symbol and soil name	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8451A: Lawson-----	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Depth to saturated zone	 1.00
8579A: Beavercreek-----	Very limited Flooding Seepage, bottom layer	 1.00 1.00	Very limited Flooding Seepage	 1.00 1.00	Somewhat limited Gravel content Seepage	 0.61 0.52

Table 17a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
21B: Pecatonica-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
21C2: Pecatonica-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
22C2: Westville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
22C3: Westville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
22D2: Westville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
29C2: Dubuque-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
29D2: Dubuque-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
40C2: Dodgeville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
40D2: Dodgeville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
51A: Muscatune-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
51B: Muscatune-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
61A: Atterberry-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
61B: Atterberry-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
67A: Harpster-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
68A: Sable-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86A: Osco-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86B: Osco-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86C: Osco-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
86C2: Osco-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
87B: Dickinson-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.31
87C2: Dickinson-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.04
	Thickest layer	0.00	Bottom layer	0.67
104A: Virgil-----	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
104B: Virgil-----	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00
105A: Batavia-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
105B: Batavia-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
105C: Batavia-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
119C2: Elco-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
134B: Camden-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.05
134C2: Camden-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.08
134C3: Camden-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.08
134D2: Camden-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.09
148A: Proctor-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148B: Proctor-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
148C2: Proctor-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.04

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
152A: Drummer-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
198A: Elburn-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
198B: Elburn-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
199A: Plano-----	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00
199B: Plano-----	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00
199C2: Plano-----	Poor		Poor	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.00
206A: Thorp-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
219A: Millbrook-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
227B: Argyle-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.09
227C2: Argyle-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.17
233B: Birkbeck-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
233C2: Birkbeck-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
233D2:				
Birkbeck-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
242A:				
Kendall-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
242B:				
Kendall-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
243A:				
St. Charles-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
243B:				
St. Charles-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
243C2:				
St. Charles-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
259C2:				
Assumption-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
272A:				
Edgington-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
278A:				
Stronghurst-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
279A:				
Rozetta-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
279B:				
Rozetta-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
280B:				
Fayette-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
280C2: Fayette-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
280C3: Fayette-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
280D2: Fayette-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
290C2: Warsaw-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.91
344A: Harvard-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
344B: Harvard-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
344C2: Harvard-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
361D3: Kidder-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.03
361E2: Kidder-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.03
363D2: Griswold-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.04
403D2: Elizabeth-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
403F2: Elizabeth-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
410B: Woodbine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
410C2: Woodbine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
410C3: Woodbine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
410D2: Woodbine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
411B: Ashdale-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
411C2: Ashdale-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
412B: Ogle-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
412C2: Ogle-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
414B: Myrtle-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
414C: Myrtle-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
414C2: Myrtle-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
416B: Durand-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
416C2: Durand-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
417C2: Derinda-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
417C3: Derinda-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
417D2: Derinda-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
418C2: Schapville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
419B: Flagg-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
419C2: Flagg-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
429B: Palsgrove-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
429C2: Palsgrove-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
429D2: Palsgrove-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
506B: Hitt-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
506C2: Hitt-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
546B: Keltner-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
546C2: Keltner-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
547B: Eleroy-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
547C2: Eleroy-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
572B: Loran-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
572C: Loran-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
618C2: Senachwine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
618C3: Senachwine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
618D2: Senachwine-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
622B: Wyanet-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
622C2: Wyanet-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
656C2: Octagon-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
656D2: Octagon-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
675A: Greenbush-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
675B: Greenbush-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
675C: Greenbush-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
675C2: Greenbush-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
686B: Parkway-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
686C2: Parkway-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
731B: Nasset-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
731C2: Nasset-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
732B: Appleriver-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
732C: Appleriver-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
735C2: Casco-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.86

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
735C2:				
Rodman-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.07
	Thickest layer	0.00	Bottom layer	0.22
Fox-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.31
735D2:				
Casco-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.86
Rodman-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.07
	Thickest layer	0.00	Bottom layer	0.22
Fox-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.31
735E2:				
Casco-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.00
	Thickest layer	0.00	Bottom layer	0.86
Rodman-----	Poor		Fair	
	Bottom layer	0.00	Thickest layer	0.07
	Thickest layer	0.00	Bottom layer	0.22
Fox-----	Poor		Fair	
	Thickest layer	0.00	Thickest layer	0.00
	Bottom layer	0.00	Bottom layer	0.31
745B:				
Shullsburg-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
745C2:				
Shullsburg-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
752C2:				
Oneco-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
753B:				
Massbach-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
753C2:				
Massbach-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
802B: Orthents, loamy-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
864: Pits, quarries-----	Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated	
905F: NewGlarus-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Lamoille-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00
928D2: NewGlarus-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
Palsgrove-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
1107A: Sawmill-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3074A: Radford-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3107A: Sawmill-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
3451A: Lawson-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8070A: Beaucoup-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8074A: Radford-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00

Table 17a.--Construction Materials--Continued

Map symbol and soil name	Potential as source of gravel		Potential as source of sand	
	Rating class	Value	Rating class	Value
8076A: Otter-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8077A: Huntsville-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8082A: Millington-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8103A: Houghton-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8107A: Sawmill-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8210A: Lena-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8239A: Dorchester-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8415A: Orion-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8451A: Lawson-----	Poor		Poor	
	Bottom layer	0.00	Bottom layer	0.00
	Thickest layer	0.00	Thickest layer	0.00
8579A: Beavercreek-----	Poor		Poor	
	Thickest layer	0.00	Bottom layer	0.00
	Bottom layer	0.00	Thickest layer	0.00

Table 17b.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.00 to 0.99. The smaller the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Fair		Fair		Fair	
	Content of organic matter	0.12	Shrink-swell	0.94	Too clayey	0.57
	Water erosion	0.68				
	Too acid	0.74				
	Too clayey	0.98				
21C2: Pecatonica-----	Fair		Fair		Fair	
	Content of organic matter	0.24	Shrink-swell	0.95	Too clayey	0.60
	Too acid	0.54				
	Water erosion	0.90				
	Too clayey	0.98				
22C2: Westville-----	Fair		Poor		Good	
	Content of organic matter	0.68	Low strength	0.00		
	Too acid	0.84	Shrink-swell	0.92		
22C3: Westville-----	Fair		Poor		Good	
	Content of organic matter	0.68	Low strength	0.00		
	Too acid	0.97	Shrink-swell	0.99		
22D2: Westville-----	Fair		Poor		Fair	
	Content of organic matter	0.68	Low strength	0.00	Slope	0.04
	Too acid	0.84	Shrink-swell	0.92		
29C2: Dubuque-----	Fair		Poor		Fair	
	Content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
	Depth to bedrock	0.65	Depth to bedrock	0.00	Depth to bedrock	0.65
	Too acid	0.74	Shrink-swell	0.72		
	Water erosion	0.90				
	Too clayey	0.98				
	Droughty	0.99				
29D2: Dubuque-----	Fair		Poor		Fair	
	Content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
	Depth to bedrock	0.71	Depth to bedrock	0.00	Slope	0.63
	Too acid	0.74	Shrink-swell	0.74	Depth to bedrock	0.71
	Water erosion	0.90				
	Too clayey	0.98				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
40C2: Dodgeville-----	Fair		Poor		Fair	
	Too clayey	0.68	Depth to bedrock	0.00	Too clayey	0.53
	Depth to bedrock	0.79	Low strength	0.00	Depth to bedrock	0.79
	Droughty	0.81	Shrink-swell	0.12	Slope	0.84
	Too acid	0.84				
	Water erosion	0.99				
40D2: Dodgeville-----	Fair		Poor		Fair	
	Too clayey	0.68	Depth to bedrock	0.00	Slope	0.04
	Droughty	0.79	Low strength	0.00	Too clayey	0.53
	Depth to bedrock	0.79	Shrink-swell	0.12	Depth to bedrock	0.79
	Too acid	0.84				
	Water erosion	0.99				
51A: Muscatune-----	Fair		Poor		Fair	
	Too acid	0.84	Low strength	0.00	Depth to	0.14
	Too clayey	0.92	Depth to	0.14	saturated zone	
	Content of	0.92	saturated zone		Too clayey	0.67
	organic matter		Shrink-swell	0.99		
	Water erosion	0.99				
51B: Muscatune-----	Fair		Poor		Fair	
	Too clayey	0.92	Low strength	0.00	Depth to	0.14
	Too acid	0.97	Depth to	0.14	saturated zone	
	Water erosion	0.99	saturated zone		Too clayey	0.72
			Shrink-swell	0.99		
61A: Atterberry-----	Fair		Poor		Fair	
	Content of	0.18	Low strength	0.00	Depth to	0.04
	organic matter		Depth to	0.04	saturated zone	
	Too acid	0.74	saturated zone		Too clayey	0.55
	Water erosion	0.90	Shrink-swell	0.99		
	Too clayey	0.92				
61B: Atterberry-----	Fair		Poor		Fair	
	Content of	0.18	Low strength	0.00	Depth to	0.04
	organic matter		Depth to	0.04	saturated zone	
	Too acid	0.74	saturated zone		Too clayey	0.55
	Water erosion	0.90	Shrink-swell	0.98		
	Too clayey	0.92				
67A: Harpster-----	Fair		Poor		Poor	
	Content of	0.12	Depth to	0.00	Depth to	0.00
	organic matter		saturated zone		saturated zone	
	Carbonate content	0.68	Low strength	0.00	Carbonate content	0.75
	Too clayey	0.82	Shrink-swell	0.87	Too clayey	0.82
	Water erosion	0.90				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
68A: Sable-----	Fair		Poor		Poor	
	Content of organic matter	0.68	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Too clayey	0.98	Low strength	0.00	Too clayey	0.98
	Water erosion	0.99	Shrink-swell	0.87		
86A: Osco-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Water erosion	0.68	Shrink-swell	0.87		
	Too acid	0.84				
	Too clayey	0.98				
86B: Osco-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too acid	0.84	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
86C: Osco-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too acid	0.84	Shrink-swell	0.91		
	Too clayey	0.98				
	Water erosion	0.99				
86C2: Osco-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.64
	Water erosion	0.68	Shrink-swell	0.87		
	Too acid	0.84				
	Too clayey	0.98				
87B: Dickinson-----	Fair		Good		Good	
	Content of organic matter	0.12				
	Too acid	0.84				
87C2: Dickinson-----	Fair		Good		Good	
	Content of organic matter	0.12				
	Too acid	0.84				
	Droughty	0.93				
104A: Virgil-----	Fair		Poor		Fair	
	Content of organic matter	0.68	Low strength	0.00	Depth to saturated zone	0.04
	Water erosion	0.90	Depth to saturated zone	0.04	Too clayey	0.67
	Too acid	0.97				
	Too clayey	0.98				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material	Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
104B: Virgil-----	Fair		Poor		Fair
	Content of organic matter	0.68	Low strength	0.00	Depth to
	Water erosion	0.90	Depth to	0.04	saturated zone
	Too acid	0.97	saturated zone		Too clayey
	Too clayey	0.98			0.67
105A: Batavia-----	Fair		Poor		Good
	Content of organic matter	0.50	Low strength	0.00	
	Too acid	0.84	Shrink-swell	0.99	
	Water erosion	0.99			
105B: Batavia-----	Fair		Poor		Good
	Content of organic matter	0.50	Low strength	0.00	
	Too acid	0.84	Shrink-swell	0.98	
	Water erosion	0.90			
105C: Batavia-----	Fair		Poor		Good
	Content of organic matter	0.50	Low strength	0.00	
	Too acid	0.84	Shrink-swell	0.98	
	Water erosion	0.99			
119C2: Elco-----	Fair		Poor		Fair
	Content of organic matter	0.02	Low strength	0.00	Too clayey
	Water erosion	0.90	Shrink-swell	0.43	Depth to
	Too clayey	0.98	Depth to	0.98	saturated zone
			saturated zone		0.57
134B: Camden-----	Fair		Good		Fair
	Content of organic matter	0.12			Too clayey
	Water erosion	0.68			0.49
	Too clayey	0.82			
	Too acid	0.97			
134C2: Camden-----	Fair		Good		Fair
	Content of organic matter	0.12			Too clayey
	Too clayey	0.82			0.49
	Water erosion	0.90			
	Too acid	0.97			
134C3: Camden-----	Fair		Good		Fair
	Content of organic matter	0.12			Too clayey
	Too clayey	0.82			0.49
	Too acid	0.97			
	Water erosion	0.99			

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material	Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
134D2: Camden-----	Fair		Good		Fair
	Content of organic matter	0.12			Slope
	Too clayey	0.82			Too clayey
	Water erosion	0.90			
	Too acid	0.97			
148A: Proctor-----	Fair		Fair		Good
	Content of organic matter	0.12	Shrink-swell	0.98	
	Too acid	0.84			
	Water erosion	0.99			
148B: Proctor-----	Fair		Good		Fair
	Content of organic matter	0.24			Too clayey
	Too clayey	0.98			
	Water erosion	0.99			
148C2: Proctor-----	Fair		Poor		Fair
	Too clayey	0.98	Low strength	0.00	Too clayey
	Water erosion	0.99	Shrink-swell	0.96	
152A: Drummer-----	Fair		Poor		Poor
	Content of organic matter	0.50	Depth to saturated zone	0.00	Depth to saturated zone
	Carbonate content	0.92	Low strength	0.00	
	Water erosion	0.99	Shrink-swell	0.99	
198A: Elburn-----	Fair		Poor		Fair
	Too clayey	0.98	Low strength	0.00	Depth to
	Water erosion	0.99	Depth to saturated zone	0.14	saturated zone
			Shrink-swell	0.96	Too clayey
198B: Elburn-----	Fair		Poor		Fair
	Too clayey	0.98	Low strength	0.00	Depth to
	Water erosion	0.99	Depth to saturated zone	0.14	saturated zone
			Shrink-swell	0.98	Too clayey
199A: Plano-----	Fair		Poor		Fair
	Content of organic matter	0.68	Low strength	0.00	Too clayey
	Too acid	0.97	Shrink-swell	0.98	
	Too clayey	0.98			
	Water erosion	0.99			

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
199B: Plano-----	Fair		Poor		Fair	
	Content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
	Too acid	0.92	Shrink-swell	0.99		
	Too clayey	0.98				
	Water erosion	0.99				
199C2: Plano-----	Fair		Poor		Fair	
	Content of organic matter	0.68	Low strength	0.00	Too clayey	0.67
	Too acid	0.97	Shrink-swell	0.99		
	Too clayey	0.98				
	Water erosion	0.99				
206A: Thorp-----	Fair		Poor		Poor	
	Content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
	Water erosion	0.90	Low strength	0.00	Too clayey	0.57
	Too acid	0.97	Shrink-swell	0.99		
	Too clayey	0.98				
219A: Millbrook-----	Fair		Poor		Fair	
	Content of organic matter	0.68	Low strength	0.00	Depth to saturated zone	0.04
	Too acid	0.97	Depth to saturated zone	0.04	Too clayey	0.67
	Too clayey	0.98	Shrink-swell	0.99		
	Water erosion	0.99				
227B: Argyle-----	Fair		Good		Fair	
	Content of organic matter	0.12			Rock fragments	0.01
	Too acid	0.74			Too clayey	0.57
	Water erosion	0.90			Hard to reclaim (rock fragments)	0.95
	Too clayey	0.98				
227C2: Argyle-----	Fair		Good		Fair	
	Content of organic matter	0.12			Rock fragments	0.01
	Too acid	0.74			Too clayey	0.57
	Too clayey	0.98			Hard to reclaim (rock fragments)	0.95
	Water erosion	0.99				
233B: Birkbeck-----	Fair		Poor		Fair	
	Content of organic matter	0.40	Low strength	0.00	Too clayey	0.52
	Too clayey	0.82	Shrink-swell	0.89		
	Too acid	0.84				
	Water erosion	0.90				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233C2: Birkbeck-----	Fair		Poor		Fair	
	Content of organic matter	0.40	Low strength	0.00	Too clayey	0.52
	Too acid	0.54	Shrink-swell	0.97	Too acid	0.98
	Too clayey	0.82				
	Water erosion	0.90				
	Carbonate content	0.92				
233D2: Birkbeck-----	Fair		Good		Fair	
	Content of organic matter	0.18			Slope	0.04
	Too acid	0.54			Too clayey	0.52
	Too clayey	0.82			Too acid	0.98
	Water erosion	0.90				
242A: Kendall-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Depth to	0.04
	Too acid	0.61	Depth to	0.04	saturated zone	
	Water erosion	0.68	saturated zone		Too clayey	0.57
	Too clayey	0.98	Shrink-swell	0.95	Too acid	0.99
242B: Kendall-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Depth to	0.04
	Too acid	0.61	Depth to	0.04	saturated zone	
	Water erosion	0.90	saturated zone		Too clayey	0.57
	Too clayey	0.98	Shrink-swell	0.96	Too acid	0.99
243A: St. Charles-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.94		
	Water erosion	0.90				
	Too clayey	0.98				
243B: St. Charles-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.95		
	Water erosion	0.90				
	Too clayey	0.98				
243C2: St. Charles-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.88	Shrink-swell	0.99		
	Water erosion	0.90				
	Too clayey	0.98				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
259C2: Assumption-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.64
	Too acid	0.97	Shrink-swell	0.31	Depth to	0.98
	Too clayey	0.98	Depth to	0.98	saturated zone	
	Water erosion	0.99	saturated zone			
272A: Edgington-----	Fair		Poor		Poor	
	Too acid	0.54	Depth to	0.00	Depth to	0.00
	Water erosion	0.90	saturated zone		saturated zone	
			Low strength	0.00		
278A: Stronghurst-----	Fair		Poor		Fair	
	Content of organic matter	0.88	Low strength	0.00	Depth to	0.04
	Water erosion	0.90	Depth to	0.04	saturated zone	
	Too acid	0.97	saturated zone		Too clayey	0.70
	Too clayey	0.98	Shrink-swell	0.97		
279A: Rozetta-----	Fair		Poor		Fair	
	Content of organic matter	0.24	Low strength	0.00	Too clayey	0.60
	Water erosion	0.68	Shrink-swell	0.96		
	Too acid	0.68				
	Too clayey	0.98				
279B: Rozetta-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Water erosion	0.68	Shrink-swell	0.92		
	Too acid	0.68				
	Too clayey	0.98				
280B: Fayette-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Water erosion	0.68	Shrink-swell	0.87		
	Too acid	0.68				
	Too clayey	0.98				
280C2: Fayette-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.68	Shrink-swell	0.87		
	Water erosion	0.90				
	Too clayey	0.98				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
280C3: Fayette-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.68	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
280D2: Fayette-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Slope	0.04
	Too acid	0.68	Shrink-swell	0.87	Too clayey	0.57
	Water erosion	0.90				
	Too clayey	0.98				
290C2: Warsaw-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Content of organic matter	0.08			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.92			Rock fragments	0.00
	Too acid	0.95				
	Droughty	0.98				
344A: Harvard-----	Fair		Fair		Good	
	Content of organic matter	0.12				
	Too acid	0.97				
	Water erosion	0.99				
344B: Harvard-----	Fair		Fair		Good	
	Content of organic matter	0.12	Low strength	0.78		
	Too acid	0.97	Shrink-swell	0.90		
	Water erosion	0.99				
344C2: Harvard-----	Fair		Poor		Good	
	Content of organic matter	0.68	Low strength	0.00		
	Too acid	0.97	Shrink-swell	0.99		
	Water erosion	0.99				
361D3: Kidder-----	Fair		Good		Fair	
	Content of organic matter	0.12			Slope	0.96
	Carbonate content	0.92				
361E2: Kidder-----	Fair		Fair		Poor	
	Content of organic matter	0.12	Slope	0.98	Slope	0.00
	Carbonate content	0.92				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
363D2: Griswold-----	Fair Content of organic matter Carbonate content	0.12 0.68	Good		Fair Slope	0.96
403D2: Elizabeth-----	Poor Droughty Depth to bedrock	0.00 0.00	Poor Depth to bedrock Low strength	0.00 0.00	Poor Depth to bedrock Slope Rock fragments	0.00 0.04 0.76
403F2: Elizabeth-----	Poor Droughty Depth to bedrock	0.00 0.00	Poor Depth to bedrock Slope	0.00 0.00	Poor Slope Depth to bedrock Rock fragments	0.00 0.00 0.76
410B: Woodbine-----	Fair Content of organic matter Water erosion Too acid Too clayey	0.24 0.68 0.68 0.98	Poor Low strength Depth to bedrock Shrink-swell	0.00 0.01 0.80	Fair Too clayey	0.60
410C2: Woodbine-----	Fair Content of organic matter Too acid Water erosion Too clayey	0.24 0.68 0.90 0.98	Poor Low strength Depth to bedrock Shrink-swell	0.00 0.39 0.80	Fair Too clayey	0.60
410C3: Woodbine-----	Fair Content of organic matter Too acid Too clayey Water erosion	0.24 0.68 0.98 0.99	Poor Low strength Depth to bedrock Shrink-swell	0.00 0.01 0.63	Fair Too clayey Slope	0.60 0.84
410D2: Woodbine-----	Fair Content of organic matter Water erosion Too acid	0.68 0.90 0.92	Poor Low strength Depth to bedrock Shrink-swell	0.00 0.23 0.79	Fair Slope	0.04
411B: Ashdale-----	Fair Content of organic matter Too clayey Too acid Water erosion	0.50 0.82 0.84 0.99	Poor Low strength Depth to bedrock Shrink-swell	0.00 0.68 0.93	Fair Too clayey	0.54

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
411C2: Ashdale-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.54
	Too clayey	0.82	Shrink-swell	0.87		
	Too acid	0.84	Depth to bedrock	0.95		
	Water erosion	0.99				
412B: Ogle-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.64
	Too acid	0.74	Shrink-swell	0.89		
	Too clayey	0.98				
	Water erosion	0.99				
412C2: Ogle-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too acid	0.74	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
414B: Myrtle-----	Fair		Poor		Fair	
	Too acid	0.54	Low strength	0.00	Too clayey	0.67
	Content of organic matter	0.68	Shrink-swell	0.91	Too acid	0.98
	Water erosion	0.90				
	Too clayey	0.98				
414C: Myrtle-----	Fair		Poor		Fair	
	Too acid	0.54	Low strength	0.00	Too clayey	0.67
	Content of organic matter	0.68	Shrink-swell	0.87	Too acid	0.98
	Too clayey	0.98				
	Water erosion	0.99				
414C2: Myrtle-----	Fair		Poor		Fair	
	Too acid	0.54	Low strength	0.00	Too clayey	0.67
	Content of organic matter	0.68	Shrink-swell	0.87	Too acid	0.98
	Too clayey	0.98				
	Water erosion	0.99				
416B: Durand-----	Fair		Good		Fair	
	Content of organic matter	0.01			Rock fragments	0.50
	Too acid	0.84				
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
416C2: Durand-----	Fair		Fair		Fair	
	Content of organic matter	0.02	Shrink-swell	0.87	Rock fragments	0.50
	Too acid	0.84			Too clayey	0.52
	Too clayey	0.98				
	Water erosion	0.99				
417C2: Derinda-----	Fair		Poor		Fair	
	Depth to bedrock	0.16	Low strength	0.00	Too clayey	0.13
	Too clayey	0.18	Depth to bedrock	0.00	Depth to bedrock	0.16
	Droughty	0.55	Shrink-swell	0.87		
	Content of organic matter	0.88				
	Water erosion	0.90				
	Too acid	0.95				
417C3: Derinda-----	Fair		Poor		Fair	
	Too clayey	0.12	Low strength	0.00	Too clayey	0.09
	Depth to bedrock	0.16	Depth to bedrock	0.00	Depth to bedrock	0.16
	Droughty	0.45	Shrink-swell	0.87		
	Content of organic matter	0.88				
	Water erosion	0.90				
	Too acid	0.95				
417D2: Derinda-----	Fair		Poor		Fair	
	Depth to bedrock	0.16	Low strength	0.00	Slope	0.04
	Too clayey	0.18	Depth to bedrock	0.00	Too clayey	0.13
	Droughty	0.50	Shrink-swell	0.87	Depth to bedrock	0.16
	Content of organic matter	0.88				
	Water erosion	0.90				
	Too acid	0.95				
418C2: Schapville-----	Fair		Poor		Fair	
	Too clayey	0.76	Low strength	0.00	Too clayey	0.63
	Depth to bedrock	0.84	Depth to bedrock	0.00	Depth to bedrock	0.84
	Too acid	0.95	Shrink-swell	0.87		
	Water erosion	0.99				
419B: Flagg-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.57
	Too acid	0.54	Shrink-swell	0.97	Too acid	0.98
	Water erosion	0.68				
	Too clayey	0.98				
419C2: Flagg-----	Fair		Poor		Fair	
	Content of organic matter	0.02	Low strength	0.00	Too clayey	0.57
	Too acid	0.54			Too acid	0.98
	Water erosion	0.90				
	Too clayey	0.98				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
429B: Palsgrove-----	Fair		Poor		Fair	
	Content of organic matter	0.75	Low strength	0.00	Too clayey	0.68
	Water erosion	0.90	Shrink-swell	0.74		
	Too acid	0.97				
	Too clayey	0.98				
429C2: Palsgrove-----	Fair		Poor		Fair	
	Content of organic matter	0.75	Low strength	0.00	Too clayey	0.68
	Water erosion	0.90	Shrink-swell	0.73		
	Too acid	0.97	Depth to bedrock	0.74		
	Too clayey	0.98				
429D2: Palsgrove-----	Fair		Poor		Fair	
	Content of organic matter	0.75	Low strength	0.00	Slope	0.84
	Water erosion	0.90	Depth to bedrock	0.46		
	Too acid	0.97	Shrink-swell	0.81		
506B: Hitt-----	Fair		Poor		Fair	
	Content of organic matter	0.08	Low strength	0.00	Too clayey	0.52
	Too acid	0.74	Depth to bedrock	0.04		
	Too clayey	0.92	Shrink-swell	0.94		
	Water erosion	0.99				
506C2: Hitt-----	Fair		Poor		Fair	
	Content of organic matter	0.08	Low strength	0.00	Too clayey	0.52
	Too acid	0.74	Depth to bedrock	0.04		
	Too clayey	0.92	Shrink-swell	0.94		
	Water erosion	0.99				
546B: Keltner-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Water erosion	0.90	Depth to bedrock	0.00	Depth to	0.89
	Too clayey	0.98	Depth to	0.89	saturated zone	
			saturated zone			
			Shrink-swell	0.94		
546C2: Keltner-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Too clayey	0.98	Depth to bedrock	0.07	Depth to	0.89
	Water erosion	0.99	Shrink-swell	0.89	saturated zone	
			Depth to	0.89		
			saturated zone			

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
547B: Eleroy-----	Fair		Poor		Fair	
	Content of organic matter	0.88	Low strength	0.00	Too clayey	0.70
	Water erosion	0.90	Depth to bedrock	0.04	Depth to saturated zone	0.98
	Too clayey	0.98	Shrink-swell	0.87		
			Depth to saturated zone	0.98		
547C2: Eleroy-----	Fair		Poor		Fair	
	Content of organic matter	0.88	Low strength	0.00	Too clayey	0.66
	Water erosion	0.90	Depth to bedrock	0.74	Depth to saturated zone	0.98
	Too clayey	0.92	Shrink-swell	0.89		
			Depth to saturated zone	0.98		
572B: Loran-----	Fair		Poor		Fair	
	Water erosion	0.99	Low strength	0.00	Depth to saturated zone	0.14
			Depth to saturated zone	0.14		
			Depth to bedrock	0.68		
			Shrink-swell	0.90		
572C: Loran-----	Fair		Poor		Fair	
	Water erosion	0.99	Low strength	0.00	Depth to saturated zone	0.14
			Depth to bedrock	0.00		
			Depth to saturated zone	0.14		
			Shrink-swell	0.92		
618C2: Senachwine-----	Fair		Good		Fair	
	Content of organic matter	0.12			Too clayey	0.57
	Carbonate content	0.16				
	Water erosion	0.90				
	Droughty	0.94				
	Too acid	0.97				
	Too clayey	0.98				
618C3: Senachwine-----	Fair		Good		Fair	
	Content of organic matter	0.12			Carbonate content	0.98
	Carbonate content	0.16				
	Droughty	0.26				
618D2: Senachwine-----	Fair		Good		Fair	
	Content of organic matter	0.12			Slope	0.04
	Carbonate content	0.16			Too clayey	0.57
	Water erosion	0.90				
	Too acid	0.97				
	Too clayey	0.98				
	Droughty	0.98				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
622B: Wyanet-----	Fair		Fair		Fair	
	Content of organic matter	0.12	Shrink-swell	0.99	Too clayey	0.67
	Carbonate content	0.92				
	Too clayey	0.92				
	Too acid	0.95				
	Water erosion	0.99				
622C2: Wyanet-----	Fair		Good		Good	
	Content of organic matter	0.12				
	Carbonate content	0.92				
656C2: Octagon-----	Fair		Fair		Fair	
	Content of organic matter	0.02	Depth to saturated zone	0.98	Depth to saturated zone	0.98
	Carbonate content	0.80				
	Water erosion	0.99				
656D2: Octagon-----	Fair		Fair		Fair	
	Content of organic matter	0.02	Depth to saturated zone	0.98	Slope Depth to saturated zone	0.96
	Carbonate content	0.80				0.98
	Water erosion	0.99				
675A: Greenbush-----	Fair		Poor		Fair	
	Content of organic matter	0.88	Low strength	0.00	Too clayey	0.70
	Water erosion	0.90	Shrink-swell	0.93		
	Too acid	0.97				
	Too clayey	0.98				
675B: Greenbush-----	Fair		Poor		Fair	
	Content of organic matter	0.88	Low strength	0.00	Too clayey	0.70
	Too acid	0.97	Shrink-swell	0.91		
	Too clayey	0.98				
	Water erosion	0.99				
675C: Greenbush-----	Fair		Poor		Fair	
	Content of organic matter	0.88	Low strength	0.00	Too clayey	0.70
	Too acid	0.97	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				
675C2: Greenbush-----	Fair		Poor		Fair	
	Content of organic matter	0.88	Low strength	0.00	Too clayey	0.70
	Too acid	0.97	Shrink-swell	0.87		
	Too clayey	0.98				
	Water erosion	0.99				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
686B: Parkway-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Water erosion	0.90	Shrink-swell	0.99		
	Too acid	0.97				
	Too clayey	0.98				
686C2: Parkway-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Too clayey	0.64
	Water erosion	0.90	Shrink-swell	0.99		
	Too acid	0.97				
	Too clayey	0.98				
731B: Nasset-----	Fair		Poor		Fair	
	Too acid	0.84	Low strength	0.00	Hard to reclaim	0.99
	Water erosion	0.90	Shrink-swell	0.71	(rock fragments)	
			Depth to bedrock	0.82		
731C2: Nasset-----	Fair		Poor		Fair	
	Too acid	0.84	Low strength	0.00	Hard to reclaim	0.99
	Content of organic matter	0.88	Shrink-swell	0.69	(rock fragments)	
	Water erosion	0.99	Depth to bedrock	0.82		
732B: Appleriver-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Depth to	0.14
	Too acid	0.74	Depth to	0.14	saturated zone	
	Water erosion	0.90	saturated zone		Too clayey	0.70
	Too clayey	0.98	Shrink-swell	0.91		
			Depth to bedrock	0.99		
732C: Appleriver-----	Fair		Poor		Fair	
	Content of organic matter	0.12	Low strength	0.00	Depth to	0.14
	Too acid	0.74	Depth to	0.14	saturated zone	
	Water erosion	0.90	saturated zone		Too clayey	0.70
	Too clayey	0.98	Shrink-swell	0.91		
			Depth to bedrock	0.99		
735C2: Casco-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Content of organic matter	0.12			Rock fragments	0.00
	Droughty	0.21			Hard to reclaim	0.00
					(rock fragments)	
					Slope	0.84
Rodman-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Droughty	0.00			Rock fragments	0.00
	Content of organic matter	0.12			Hard to reclaim	0.00
	Carbonate content	0.46			(rock fragments)	
					Carbonate content	0.77
					Slope	0.84

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
735C2: Fox-----	Fair		Fair		Poor	
	Content of organic matter	0.12	Shrink-swell	0.99	Hard to reclaim (rock fragments)	0.00
	Water erosion	0.68			Too clayey	0.53
	Carbonate content	0.68			Slope	0.84
	Too clayey	0.92				
735D2: Casco-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Content of organic matter	0.12			Rock fragments	0.00
	Droughty	0.21			Hard to reclaim (rock fragments)	0.00
					Slope	0.84
Rodman-----	Poor		Good		Poor	
	Too sandy	0.00			Too sandy	0.00
	Droughty	0.00			Rock fragments	0.00
	Content of organic matter	0.12			Hard to reclaim (rock fragments)	0.00
	Carbonate content	0.46			Carbonate content	0.77
					Slope	0.84
Fox-----	Fair		Fair		Poor	
	Content of organic matter	0.12	Shrink-swell	0.99	Hard to reclaim (rock fragments)	0.00
	Water erosion	0.68			Too clayey	0.53
	Carbonate content	0.68			Slope	0.84
	Too clayey	0.92				
735E2: Casco-----	Poor		Fair		Poor	
	Too sandy	0.00	Slope	0.98	Too sandy	0.00
	Droughty	0.11			Slope	0.00
	Content of organic matter	0.12			Rock fragments	0.00
					Hard to reclaim (rock fragments)	0.00
Rodman-----	Poor		Fair		Poor	
	Too sandy	0.00	Slope	0.98	Too sandy	0.00
	Droughty	0.00			Rock fragments	0.00
	Content of organic matter	0.12			Slope	0.00
	Carbonate content	0.46			Hard to reclaim (rock fragments)	0.00
					Carbonate content	0.77
Fox-----	Fair		Fair		Poor	
	Content of organic matter	0.12	Slope	0.98	Slope	0.00
	Carbonate content	0.68	Shrink-swell	0.99	Hard to reclaim (rock fragments)	0.00
	Water erosion	0.90			Too clayey	0.53
	Too clayey	0.92				

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material	Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
745B: Shullsburg-----	Fair		Poor		Fair
	Depth to bedrock	0.35	Low strength	0.00	Depth to
	Droughty	0.93	Depth to bedrock	0.00	saturated zone
	Water erosion	0.99	Depth to	0.12	Depth to bedrock
			saturated zone		0.35
			Shrink-swell	0.62	
745C2: Shullsburg-----	Fair		Poor		Fair
	Depth to bedrock	0.35	Low strength	0.00	Depth to
	Content of	0.88	Depth to bedrock	0.00	saturated zone
	organic matter		Depth to	0.12	Depth to bedrock
	Droughty	0.91	saturated zone		0.35
	Water erosion	0.99	Shrink-swell	0.56	
752C2: Oneco-----	Fair		Poor		Fair
	Content of	0.68	Low strength	0.00	Too clayey
	organic matter		Depth to bedrock	0.01	0.67
	Too acid	0.84	Shrink-swell	0.87	
	Too clayey	0.98			
	Water erosion	0.99			
753B: Massbach-----	Fair		Poor		Good
	Too acid	0.88	Low strength	0.00	
	Water erosion	0.90	Depth to bedrock	0.23	
			Shrink-swell	0.89	
753C2: Massbach-----	Fair		Poor		Good
	Water erosion	0.99	Low strength	0.00	
			Depth to bedrock	0.23	
			Shrink-swell	0.87	
802B: Orthents, loamy----	Fair		Poor		Good
	Content of	0.68	Low strength	0.00	
	organic matter		Shrink-swell	0.87	
	Water erosion	0.90			
864: Pits, quarries-----	Not rated		Not rated		Not rated
865: Pits, gravel-----	Not rated		Not rated		Not rated
905F: NewGlarus-----	Fair		Poor		Poor
	Depth to bedrock	0.84	Low strength	0.00	Slope
	Content of	0.88	Depth to bedrock	0.00	Too clayey
	organic matter		Slope	0.00	Depth to bedrock
	Too clayey	0.98	Shrink-swell	0.51	0.84
	Water erosion	0.99			

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
905F: Lamoille-----	Poor		Poor		Poor	
	Too clayey	0.00	Slope	0.00	Slope	0.00
	Content of organic matter	0.12	Low strength	0.00	Too clayey	0.00
	Water erosion	0.68	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.00
	Too acid	0.88			Rock fragments	0.00
928D2: NewGlarus-----	Fair		Poor		Fair	
	Content of organic matter	0.88	Low strength	0.00	Slope	0.04
	Depth to bedrock	0.93	Depth to bedrock	0.00	Too clayey	0.70
	Too clayey	0.98	Shrink-swell	0.54	Depth to bedrock	0.93
	Water erosion	0.99				
Palsgrove-----	Fair		Poor		Fair	
	Content of organic matter	0.75	Low strength	0.00	Slope	0.04
	Water erosion	0.90	Depth to bedrock	0.46	Too clayey	0.68
	Too acid	0.97	Shrink-swell	0.81		
	Too clayey	0.98				
1107A: Sawmill-----	Fair		Poor		Poor	
	Too clayey	0.98	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
3074A: Radford-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Depth to	0.14
	Water erosion	0.68	Depth to saturated zone	0.14	saturated zone	
3107A: Sawmill-----	Fair		Poor		Poor	
	Too clayey	0.98	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
3451A: Lawson-----	Fair		Poor		Fair	
	Content of organic matter	0.50	Low strength	0.00	Depth to	0.14
	Water erosion	0.68	Depth to saturated zone	0.14	saturated zone	
8070A: Beaucoup-----	Fair		Poor		Poor	
	Too clayey	0.98	Depth to saturated zone	0.00	Depth to saturated zone	0.00
			Low strength	0.00	Too clayey	0.76
			Shrink-swell	0.87		

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8074A: Radford-----	Fair		Poor		Fair	
	Water erosion	0.68	Low strength	0.00	Depth to	0.29
	Too acid	0.84	Depth to	0.29	saturated zone	
			Shrink-swell	0.99		
8076A: Otter-----	Fair		Poor		Poor	
	Water erosion	0.68	Depth to	0.00	Depth to	0.00
			saturated zone	0.78	saturated zone	
			Low strength			
8077A: Huntsville-----	Good		Fair		Good	
			Shrink-swell	0.94		
8082A: Millington-----	Fair		Poor		Poor	
	Carbonate content	0.92	Depth to	0.00	Depth to	0.00
			saturated zone	0.98	saturated zone	
			Shrink-swell			
8103A: Houghton-----	Poor		Poor		Poor	
	Wind erosion	0.00	Depth to	0.00	Depth to	0.00
			saturated zone		saturated zone	
					Hard to reclaim	0.00
					(rock fragments)	
					Rock fragments	0.00
					Content of	0.00
					organic matter	
8107A: Sawmill-----	Fair		Poor		Poor	
	Too clayey	0.98	Depth to	0.00	Depth to	0.00
			saturated zone	0.00	saturated zone	
			Low strength	0.00	Too clayey	0.98
			Shrink-swell	0.87		
8210A: Lena-----	Poor		Poor		Poor	
	Wind erosion	0.00	Depth to	0.00	Depth to	0.00
			saturated zone		saturated zone	
					Hard to reclaim	0.00
					(rock fragments)	
					Rock fragments	0.00
					Content of	0.00
					organic matter	
8239A: Dorchester-----	Fair		Poor		Good	
	Water erosion	0.68	Low strength	0.00		
	Carbonate content	0.97	Shrink-swell	0.87		
8415A: Orion-----	Fair		Poor		Fair	
	Water erosion	0.37	Low strength	0.00	Depth to	0.14
			Depth to	0.14	saturated zone	
			saturated zone			

Table 17b.--Construction Materials--Continued

Map symbol and soil name	Potential as source of reclamation material		Potential as source of roadfill		Potential as source of topsoil	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8451A: Lawson-----	Fair Water erosion	0.68	Poor Low strength Depth to saturated zone	0.00 0.14	Fair Depth to saturated zone	0.14
8579A: Beavercreek-----	Fair Content of organic matter Water erosion Droughty	0.12 0.68 0.98	Fair Cobble content	0.79	Poor Rock fragments Hard to reclaim (rock fragments)	0.00 0.00

Table 18a.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
21C2: Pecatonica-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.01	Very limited Depth to water	1.00
22C2: Westville-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.01	Very limited Depth to water	1.00
22C3: Westville-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.04	Very limited Depth to water	1.00
22D2: Westville-----	Somewhat limited Seepage Slope	0.72 0.02	Somewhat limited Piping	0.01	Very limited Depth to water	1.00
29C2: Dubuque-----	Somewhat limited Depth to bedrock Seepage	0.83 0.72	Somewhat limited Thin layer	0.83	Very limited Depth to water	1.00
29D2: Dubuque-----	Somewhat limited Depth to bedrock Seepage Slope	0.81 0.72 0.01	Somewhat limited Thin layer	0.81	Very limited Depth to water	1.00
40C2: Dodgeville-----	Somewhat limited Seepage Depth to bedrock	0.54 0.06	Somewhat limited Thin layer Hard to pack	0.77 0.20	Very limited Depth to water	1.00
40D2: Dodgeville-----	Somewhat limited Seepage Depth to bedrock Slope	0.54 0.06 0.02	Somewhat limited Thin layer Hard to pack	0.77 0.23	Very limited Depth to water	1.00
51A: Muscatune-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.18	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
51B: Muscatune-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.34	Somewhat limited Slow refill Cutbanks cave	0.28 0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
61A: Atterberry-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.03	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
61B: Atterberry-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.01	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
67A: Harpster-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
68A: Sable-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
86A: Oscos-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.02	Very limited Depth to water	1.00
86B: Oscos-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
86C: Oscos-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
86C2: Oscos-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.01	Very limited Depth to water	1.00
87B: Dickinson-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.31	Very limited Depth to water	1.00
87C2: Dickinson-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.67	Very limited Depth to water	1.00
104A: Virgil-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 0.06 0.01	Somewhat limited Cutbanks cave	0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
104B: Virgil-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping Seepage	1.00 0.05 0.01	Somewhat limited Cutbanks cave	0.10
105A: Batavia-----	Very limited Seepage	1.00	Somewhat limited Piping	0.47	Very limited Depth to water	1.00
105B: Batavia-----	Very limited Seepage	1.00	Somewhat limited Piping	0.42	Very limited Depth to water	1.00
105C: Batavia-----	Very limited Seepage	1.00	Somewhat limited Piping	0.29	Very limited Depth to water	1.00
119C2: Elco-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.68 0.03	Very limited Depth to water	1.00
134B: Camden-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.98 0.05	Very limited Depth to water	1.00
134C2: Camden-----	Very limited Seepage	1.00	Very limited Piping Seepage	0.99 0.08	Very limited Depth to water	1.00
134C3: Camden-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.97 0.08	Very limited Depth to water	1.00
134D2: Camden-----	Very limited Seepage Slope	1.00 0.02	Very limited Piping Seepage	1.00 0.09	Very limited Depth to water	1.00
148A: Proctor-----	Very limited Seepage	1.00	Somewhat limited Piping	0.58	Very limited Depth to water	1.00
148B: Proctor-----	Very limited Seepage	1.00	Somewhat limited Piping	0.58	Very limited Depth to water	1.00
148C2: Proctor-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.40 0.04	Very limited Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
152A: Drummer-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding	1.00 1.00	Very limited Cutbanks cave Slow refill	1.00 0.28
198A: Elburn-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping	1.00 0.19	Somewhat limited Cutbanks cave	0.10
198B: Elburn-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Piping	1.00 0.54	Somewhat limited Cutbanks cave	0.10
199A: Plano-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.48 0.01	Very limited Depth to water	1.00
199B: Plano-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.96 0.01	Very limited Depth to water	1.00
199C2: Plano-----	Very limited Seepage	1.00	Somewhat limited Piping Seepage	0.32 0.01	Very limited Depth to water	1.00
206A: Thorp-----	Very limited Seepage	1.00	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.36	Somewhat limited Cutbanks cave	0.10
219A: Millbrook-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.84	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
227B: Argyle-----	Somewhat limited Seepage	0.72	Somewhat limited Seepage Piping	0.09 0.05	Very limited Depth to water	1.00
227C2: Argyle-----	Somewhat limited Seepage	0.72	Somewhat limited Seepage Piping	0.17 0.01	Very limited Depth to water	1.00
233B: Birkbeck-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.02	Very limited Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
233C2: Birkbeck-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.12	Very limited Depth to water	1.00
233D2: Birkbeck-----	Somewhat limited Seepage Slope	0.72 0.02	Somewhat limited Piping	0.43	Very limited Depth to water	1.00
242A: Kendall-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.53	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
242B: Kendall-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.11	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
243A: St. Charles-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.64	Very limited Depth to water	1.00
243B: St. Charles-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.63	Very limited Depth to water	1.00
243C2: St. Charles-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.19	Very limited Depth to water	1.00
259C2: Assumption-----	Somewhat limited Seepage	0.72	Somewhat limited Depth to saturated zone Piping	0.68 0.01	Somewhat limited Slow refill Depth to saturated zone Cutbanks cave	0.98 0.14 0.10
272A: Edgington-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.68	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
278A: Stronghurst-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone	1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
279A: Rozetta-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
279B: Rozetta-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.01	Very limited Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
280B: Fayette-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.21	Very limited Depth to water	1.00
280C2: Fayette-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
280C3: Fayette-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.02	Very limited Depth to water	1.00
280D2: Fayette-----	Somewhat limited Seepage Slope	0.72 0.02	Somewhat limited Piping	0.03	Very limited Depth to water	1.00
290C2: Warsaw-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.95	Very limited Depth to water	1.00
344A: Harvard-----	Very limited Seepage	1.00	Somewhat limited Piping	0.89	Very limited Depth to water	1.00
344B: Harvard-----	Very limited Seepage	1.00	Somewhat limited Piping	0.77	Very limited Depth to water	1.00
344C2: Harvard-----	Very limited Seepage	1.00	Somewhat limited Piping	0.87	Very limited Depth to water	1.00
361D3: Kidder-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
361E2: Kidder-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.03	Very limited Depth to water	1.00
363D2: Griswold-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.04	Very limited Depth to water	1.00
403D2: Elizabeth-----	Very limited Depth to bedrock Seepage Slope	1.00 0.02 0.02	Very limited Thin layer Piping	1.00 0.50	Very limited Depth to water	1.00
403F2: Elizabeth-----	Very limited Depth to bedrock Slope Seepage	1.00 0.34 0.02	Very limited Thin layer Piping	1.00 0.50	Very limited Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
410B: Woodbine-----	Somewhat limited Seepage Depth to bedrock	0.72 0.42	Somewhat limited Thin layer	0.42	Very limited Depth to water	1.00
410C2: Woodbine-----	Somewhat limited Seepage Depth to bedrock	0.72 0.16	Somewhat limited Thin layer	0.16	Very limited Depth to water	1.00
410C3: Woodbine-----	Somewhat limited Seepage Depth to bedrock	0.72 0.42	Somewhat limited Thin layer	0.42	Very limited Depth to water	1.00
410D2: Woodbine-----	Somewhat limited Seepage Depth to bedrock Slope	0.72 0.22 0.02	Somewhat limited Thin layer	0.22	Very limited Depth to water	1.00
411B: Ashdale-----	Somewhat limited Seepage Depth to bedrock	0.72 0.08	Somewhat limited Thin layer	0.08	Very limited Depth to water	1.00
411C2: Ashdale-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Somewhat limited Thin layer	0.01	Very limited Depth to water	1.00
412B: Ogle-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
412C2: Ogle-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
414B: Myrtle-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
414C: Myrtle-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
414C2: Myrtle-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
416B: Durand-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.29	Very limited Depth to water	1.00
416C2: Durand-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
417C2: Derinda-----	Somewhat limited		Very limited		Very limited	
	Slope	0.98	Depth to	1.00	Slow refill	1.00
	Depth to bedrock	0.26	saturated zone		Cutbanks cave	0.10
			Thin layer	0.96	Depth to	0.01
					saturated zone	
417C3: Derinda-----	Somewhat limited		Very limited		Very limited	
	Slope	0.98	Depth to	1.00	Slow refill	1.00
	Depth to bedrock	0.26	saturated zone		Cutbanks cave	0.10
			Thin layer	0.96	Depth to	0.01
					saturated zone	
417D2: Derinda-----	Very limited		Very limited		Very limited	
	Slope	0.98	Depth to	1.00	Slow refill	1.00
	Depth to bedrock	0.26	saturated zone		Cutbanks cave	0.10
			Thin layer	0.96	Depth to	0.01
					saturated zone	
418C2: Schapville-----	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.74	Depth to water	1.00
	Depth to bedrock	0.05	Piping	0.03		
419B: Flagg-----	Somewhat limited		Not limited		Very limited	
	Seepage	0.72			Depth to water	1.00
419C2: Flagg-----	Somewhat limited		Not limited		Very limited	
	Seepage	0.72			Depth to water	1.00
429B: Palsgrove-----	Somewhat limited		Not limited		Very limited	
	Seepage	0.72			Depth to water	1.00
429C2: Palsgrove-----	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.06	Depth to water	1.00
	Depth to bedrock	0.06				
429D2: Palsgrove-----	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.13	Depth to water	1.00
	Depth to bedrock	0.13				
506B: Hitt-----	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.37	Depth to water	1.00
	Depth to bedrock	0.37				
506C2: Hitt-----	Somewhat limited		Somewhat limited		Very limited	
	Seepage	0.72	Thin layer	0.37	Depth to water	1.00
	Depth to bedrock	0.37				

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
546B: Keltner-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Somewhat limited Depth to saturated zone Thin layer Piping	0.86 0.46 0.15	Very limited Depth to water	1.00
546C2: Keltner-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Somewhat limited Depth to saturated zone Thin layer Piping	0.86 0.34 0.03	Very limited Depth to water	1.00
547B: Eleroy-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Somewhat limited Depth to saturated zone Thin layer Piping	0.68 0.37 0.01	Very limited Depth to water	1.00
547C2: Eleroy-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Somewhat limited Depth to saturated zone Thin layer	0.68 0.06	Very limited Depth to water	1.00
572B: Loran-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Very limited Depth to saturated zone Thin layer Piping	1.00 0.08 0.04	Very limited Depth to water	1.00
572C: Loran-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Very limited Depth to saturated zone Thin layer Piping	1.00 0.46 0.16	Very limited Depth to water	1.00
618C2: Senachwine-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.84	Very limited Depth to water	1.00
618C3: Senachwine-----	Somewhat limited Seepage	0.04	Somewhat limited Piping	0.97	Very limited Depth to water	1.00
618D2: Senachwine-----	Somewhat limited Seepage Slope	0.72 0.02	Somewhat limited Piping	0.82	Very limited Depth to water	1.00
622B: Wyanet-----	Somewhat limited Seepage	0.04	Somewhat limited Piping	0.44	Very limited Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
622C2: Wyanet-----	Somewhat limited Seepage	0.04	Somewhat limited Piping	0.38	Very limited Depth to water	1.00
656C2: Octagon-----	Somewhat limited Seepage	0.72	Somewhat limited Piping Depth to saturated zone	0.95 0.68	Very limited Depth to water	1.00
656D2: Octagon-----	Somewhat limited Seepage	0.72	Very limited Piping Depth to saturated zone	1.00 0.68	Very limited Depth to water	1.00
675A: Greenbush-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.28	Very limited Depth to water	1.00
675B: Greenbush-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.17	Very limited Depth to water Slow refill	1.00 0.28
675C: Greenbush-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.08	Very limited Depth to water	1.00
675C2: Greenbush-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.08	Very limited Depth to water	1.00
686B: Parkway-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
686C2: Parkway-----	Somewhat limited Seepage	0.72	Not limited		Very limited Depth to water	1.00
731B: Nasset-----	Somewhat limited Seepage Depth to bedrock	0.72 0.04	Somewhat limited Thin layer	0.04	Very limited Depth to water	1.00
731C2: Nasset-----	Somewhat limited Seepage Depth to bedrock	0.72 0.04	Somewhat limited Thin layer	0.04	Very limited Depth to water	1.00
732B: Appleriver-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Very limited Depth to saturated zone Piping Thin layer	1.00 0.19 0.01	Very limited Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
732C: Appleriver-----	Somewhat limited Seepage Depth to bedrock	0.72 0.01	Very limited Depth to saturated zone Piping Thin layer	1.00 0.19 0.01	Very limited Depth to water	1.00
735C2: Casco-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.90	Very limited Depth to water	1.00
Rodman-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.22	Very limited Depth to water	1.00
Fox-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.31	Very limited Depth to water	1.00
735D2: Casco-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.90	Very limited Depth to water	1.00
Rodman-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.22	Very limited Depth to water	1.00
Fox-----	Very limited Seepage	1.00	Somewhat limited Seepage	0.31	Very limited Depth to water	1.00
735E2: Casco-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.90	Very limited Depth to water	1.00
Rodman-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.22	Very limited Depth to water	1.00
Fox-----	Very limited Seepage Slope	1.00 0.04	Somewhat limited Seepage	0.31	Very limited Depth to water	1.00
745B: Shullsburg-----	Somewhat limited Depth to bedrock Seepage	0.17 0.04	Very limited Depth to saturated zone Thin layer Piping	1.00 0.91 0.07	Very limited Depth to water	1.00
745C2: Shullsburg-----	Somewhat limited Depth to bedrock Seepage	0.17 0.04	Very limited Depth to saturated zone Thin layer Piping	1.00 0.91 0.01	Very limited Depth to water	1.00
752C2: Oneco-----	Somewhat limited Seepage Depth to bedrock	0.72 0.42	Somewhat limited Thin layer Piping	0.42 0.01	Very limited Depth to water	1.00

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
753B: Massbach-----	Somewhat limited Seepage Depth to bedrock	 0.72 0.01	Somewhat limited Thin layer Piping	 0.22 0.01	Very limited Slow refill Depth to saturated zone Cutbanks cave	 1.00 0.81 0.10
753C2: Massbach-----	Somewhat limited Seepage Depth to bedrock	 0.72 0.01	Somewhat limited Thin layer Piping	 0.22 0.01	Very limited Slow refill Depth to saturated zone Cutbanks cave	 1.00 0.81 0.10
802B: Orthents, loamy----	Somewhat limited Seepage	 0.04	Somewhat limited Piping	 0.50	Very limited Depth to water	 1.00
864: Pits, quarries-----	Not rated		Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated		Not rated	
905F: NewGlarus-----	Somewhat limited Depth to bedrock Seepage Slope	 0.74 0.54 0.34	Somewhat limited Thin layer Hard to pack	 0.74 0.14	Very limited Depth to water	 1.00
Lamoille-----	Somewhat limited Slope Seepage	 0.34 0.04	Not limited		Very limited Depth to water	 1.00
928D2: NewGlarus-----	Somewhat limited Depth to bedrock Seepage Slope	 0.66 0.54 0.02	Somewhat limited Thin layer	 0.66	Very limited Depth to water	 1.00
Palsgrove-----	Somewhat limited Seepage Depth to bedrock Slope	 0.72 0.13 0.02	Somewhat limited Thin layer	 0.13	Very limited Depth to water	 1.00
1107A: Sawmill-----	Somewhat limited Seepage	 0.72	Very limited Depth to saturated zone Ponding	 1.00 1.00	Somewhat limited Slow refill Cutbanks cave	 0.28 0.10
3074A: Radford-----	Somewhat limited Seepage	 0.72	Very limited Depth to saturated zone Piping	 1.00 0.40	Somewhat limited Slow refill Cutbanks cave	 0.28 0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
3107A: Sawmill-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
3451A: Lawson-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.75	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8070A: Beaucoup-----	Somewhat limited Seepage	0.04	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.06	Somewhat limited Slow refill Cutbanks cave	0.96 0.10
8074A: Radford-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.57	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8076A: Otter-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.79	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8077A: Huntsville-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.66	Very limited Depth to water Slow refill	1.00 0.28
8082A: Millington-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Ponding Piping	1.00 1.00 0.81	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8103A: Houghton-----	Very limited Seepage	1.00	Very limited Organic matter content Depth to saturated zone Seepage	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
8107A: Sawmill-----	Somewhat limited Seepage	0.72	Very limited Ponding Depth to saturated zone Piping	1.00 1.00 0.03	Somewhat limited Slow refill Cutbanks cave	0.28 0.10

Table 18a.--Water Management--Continued

Map symbol and soil name	Pond reservoir areas		Embankments, dikes, and levees		Aquifer-fed excavated ponds	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8210A: Lena-----	Very limited Seepage	1.00	Very limited Organic matter content Depth to saturated zone Seepage	1.00 1.00 1.00	Somewhat limited Cutbanks cave	0.10
8239A: Dorchester-----	Somewhat limited Seepage	0.72	Somewhat limited Piping	0.64	Very limited Depth to water	1.00
8415A: Orion-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 1.00	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8451A: Lawson-----	Somewhat limited Seepage	0.72	Very limited Depth to saturated zone Piping	1.00 0.64	Somewhat limited Slow refill Cutbanks cave	0.28 0.10
8579A: Beavercreek-----	Very limited Seepage	1.00	Not limited		Very limited Depth to water	1.00

Table 18b.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. Dashes in the tile drains column indicate that drainage is generally not needed. See text for further explanation of ratings in this table)

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
21C2: Pecatonica-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
22C2: Westville-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.88	---	
22C3: Westville-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.88	---	
22D2: Westville-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	---	
29C2: Dubuque-----	Very limited Depth to hard bedrock Slope	1.00 0.84	Very limited Water erosion Depth to hard bedrock Slope	1.00 1.00 0.84	---	
29D2: Dubuque-----	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Water erosion Depth to hard bedrock Slope	1.00 1.00 1.00	---	
40C2: Dodgeville-----	Very limited Slope Depth to soft bedrock	1.00 0.20	Very limited Water erosion Slope Depth to soft bedrock	1.00 1.00 0.20	---	
40D2: Dodgeville-----	Very limited Slope Depth to soft bedrock	1.00 0.20	Very limited Water erosion Slope Depth to soft bedrock	1.00 1.00 0.20	---	

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	Value
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
51A: Muscatune-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
51B: Muscatune-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Very limited Depth to saturated zone	1.00
61A: Atterberry-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
61B: Atterberry-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Very limited Depth to saturated zone	1.00
67A: Harpster-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
68A: Sable-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
86A: Osco-----	Not limited		Very limited Water erosion	1.00	---	
86B: Osco-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
86C: Osco-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
86C2: Osco-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
87B: Dickinson-----	Somewhat limited Slope	0.26	Very limited Too sandy Slope Water erosion	1.00 0.26 0.12	---	
87C2: Dickinson-----	Somewhat limited Slope	0.99	Very limited Too sandy Slope	1.00 0.99	---	
104A: Virgil-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
104B: Virgil-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Very limited Depth to saturated zone	1.00
105A: Batavia-----	Not limited		Very limited Water erosion	1.00	---	
105B: Batavia-----	Somewhat limited Slope	0.37	Very limited Water erosion Slope	1.00 0.37	---	
105C: Batavia-----	Somewhat limited Slope	0.63	Very limited Water erosion Slope	1.00 0.63	---	
119C2: Elco-----	Somewhat limited Slope	0.99	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.99	Somewhat limited Depth to saturated zone	0.99
134B: Camden-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
134C2: Camden-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
134C3: Camden-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
134D2: Camden-----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	---	
148A: Proctor-----	Not limited		Very limited Water erosion	1.00	---	
148B: Proctor-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
148C2: Proctor-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
152A: Drummer-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Cutbanks cave	1.00 1.00 1.00
198A: Elburn-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
198B: Elburn-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Very limited Depth to saturated zone	1.00
199A: Plano-----	Not limited		Very limited Water erosion	1.00	---	
199B: Plano-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
199C2: Plano-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
206A: Thorp-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
219A: Millbrook-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone 1.00
227B: Argyle-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---
227C2: Argyle-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---
233B: Birkbeck-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	Somewhat limited Depth to saturated zone 0.13
233C2: Birkbeck-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	Somewhat limited Depth to saturated zone 0.13
233D2: Birkbeck-----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	Somewhat limited Slope Depth to saturated zone 0.96 0.13
242A: Kendall-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone 1.00
242B: Kendall-----	Somewhat limited Slope	0.16	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.16	Very limited Depth to saturated zone 1.00
243A: St. Charles-----	Not limited		Very limited Water erosion	1.00	---
243B: St. Charles-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---
243C2: St. Charles-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	Value
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
259C2: Assumption-----	Somewhat limited Slope	0.99	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.99	Somewhat limited Depth to saturated zone	0.99
272A: Edgington-----	Not limited		Very limited Water erosion Ponding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone	1.00 1.00
278A: Stronghurst-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone	1.00
279A: Rozetta-----	Not limited		Very limited Water erosion	1.00	---	
279B: Rozetta-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
280B: Fayette-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
280C2: Fayette-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
280C3: Fayette-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
280D2: Fayette-----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	Somewhat limited Slope	0.96
290C2: Warsaw-----	Very limited Slope	1.00	Very limited Too sandy Slope Water erosion	1.00 1.00 0.50	---	
344A: Harvard-----	Not limited		Very limited Water erosion	1.00	---	

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
344B: Harvard-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
344C2: Harvard-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
361D3: Kidder-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	---	
361E2: Kidder-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	---	
363D2: Griswold-----	Very limited Slope	1.00	Very limited Slope Water erosion	1.00 0.88	---	
403D2: Elizabeth-----	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Slope Depth to hard bedrock Water erosion	1.00 1.00 0.12	---	
403F2: Elizabeth-----	Very limited Depth to hard bedrock Slope	1.00 1.00	Very limited Slope Depth to hard bedrock Water erosion	1.00 1.00 0.12	---	
410B: Woodbine-----	Somewhat limited Depth to hard bedrock Slope	0.99 0.26	Very limited Water erosion Depth to hard bedrock Slope	1.00 0.99 0.26	---	
410C2: Woodbine-----	Somewhat limited Slope Depth to hard bedrock	0.99 0.61	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.99 0.61	---	
410C3: Woodbine-----	Very limited Slope Depth to hard bedrock	1.00 0.99	Very limited Water erosion Slope Depth to hard bedrock	1.00 1.00 0.99	---	

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
410D2: Woodbine-----	Very limited Slope Depth to hard bedrock	1.00 0.77	Very limited Water erosion Slope Depth to hard bedrock	1.00 1.00 0.77	---
411B: Ashdale-----	Somewhat limited Depth to hard bedrock Slope	0.32 0.26	Very limited Water erosion Depth to hard bedrock Slope	1.00 0.32 0.26	---
411C2: Ashdale-----	Somewhat limited Slope Depth to hard bedrock	0.99 0.05	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.99 0.05	---
412B: Ogle-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---
412C2: Ogle-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---
414B: Myrtle-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---
414C: Myrtle-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---
414C2: Myrtle-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---
416B: Durand-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---
416C2: Durand-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
417C2: Derinda-----	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Water erosion	1.00	Depth to	1.00
	Depth to soft bedrock	0.84	Depth to saturated zone	1.00	saturated zone	
			Slope	0.99	Depth to soft bedrock	0.84
			Depth to soft bedrock	0.84	Too clayey	0.01
417C3: Derinda-----	Somewhat limited		Very limited		Very limited	
	Slope	0.99	Water erosion	1.00	Depth to	1.00
	Depth to soft bedrock	0.84	Depth to saturated zone	1.00	saturated zone	
			Slope	0.99	Depth to soft bedrock	0.84
			Depth to soft bedrock	0.84	Too clayey	0.01
417D2: Derinda-----	Very limited		Very limited		Very limited	
	Slope	1.00	Water erosion	1.00	Depth to	1.00
	Depth to soft bedrock	0.84	Slope	1.00	saturated zone	
			Depth to saturated zone	1.00	Slope	0.96
			Depth to soft bedrock	0.84	Depth to soft bedrock	0.84
					Too clayey	0.01
417C2: Derinda-----	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Depth to soft	0.84
	Depth to soft bedrock	0.84	Slope	0.99	bedrock	
			Depth to soft bedrock	0.84	Too clayey	0.01
417C3: Derinda-----	Somewhat limited		Very limited		Somewhat limited	
	Slope	0.99	Water erosion	1.00	Depth to soft	0.84
	Depth to soft bedrock	0.84	Slope	0.99	bedrock	
			Depth to soft bedrock	0.84	Too clayey	0.01
417D2: Derinda-----	Very limited		Very limited		Somewhat limited	
	Slope	1.00	Water erosion	1.00	Slope	0.96
	Depth to soft bedrock	0.84	Slope	1.00	Depth to soft	0.84
			Depth to soft bedrock	0.84	bedrock	
					Too clayey	0.01
418C2: Schapville-----	Very limited		Very limited		---	
	Slope	1.00	Water erosion	1.00		
	Depth to soft bedrock	0.16	Slope	1.00		
			Depth to soft bedrock	0.16		
419B: Flagg-----	Somewhat limited		Very limited		---	
	Slope	0.26	Water erosion	1.00		
			Slope	0.26		

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
419C2: Flagg-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
429B: Palsgrove-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
429C2: Palsgrove-----	Somewhat limited Slope Depth to hard bedrock	0.99 0.26	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.99 0.26	---	
429D2: Palsgrove-----	Very limited Slope Depth to hard bedrock	1.00 0.54	Very limited Water erosion Slope Depth to hard bedrock	1.00 1.00 0.54	---	
506B: Hitt-----	Somewhat limited Depth to hard bedrock Slope	0.96 0.26	Very limited Water erosion Depth to hard bedrock Slope	1.00 0.96 0.26	---	
506C2: Hitt-----	Somewhat limited Slope Depth to hard bedrock	0.99 0.96	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.99 0.96	---	
546B: Keltner-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Somewhat limited Depth to saturated zone Too clayey	0.99 0.08
546C2: Keltner-----	Somewhat limited Slope	0.99	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.99	Somewhat limited Depth to saturated zone Too clayey	0.99 0.08
547B: Eleroy-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Somewhat limited Depth to saturated zone	0.99

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	Value
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	
547C2: Eleroy-----	Somewhat limited Slope	0.99	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.99	Somewhat limited Depth to saturated zone	0.99
572B: Loran-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Very limited Depth to saturated zone Too clayey	1.00 0.03
572C: Loran-----	Somewhat limited Slope	0.96	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.96	Very limited Depth to saturated zone Too clayey	1.00 0.03
618C2: Senachwine-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
618C3: Senachwine-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.88	---	
618D2: Senachwine-----	Very limited Slope	1.00	Very limited Water erosion Slope	1.00 1.00	---	
622B: Wyanet-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
622C2: Wyanet-----	Somewhat limited Slope	0.99	Somewhat limited Slope Water erosion	0.99 0.88	---	
656C2: Octagon-----	Somewhat limited Slope	0.63	Very limited Depth to saturated zone Water erosion Slope	1.00 0.88 0.63	Somewhat limited Depth to saturated zone Dense layer	0.99 0.50
656D2: Octagon-----	Very limited Slope	1.00	Very limited Depth to saturated zone Slope Water erosion	1.00 1.00 0.88	Somewhat limited Depth to saturated zone Dense layer Slope	0.99 0.50 0.04

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
675A: Greenbush-----	Not limited		Very limited Water erosion	1.00	---	
675B: Greenbush-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
675C: Greenbush-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
675C2: Greenbush-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
686B: Parkway-----	Somewhat limited Slope	0.26	Very limited Water erosion Slope	1.00 0.26	---	
686C2: Parkway-----	Somewhat limited Slope	0.99	Very limited Water erosion Slope	1.00 0.99	---	
731B: Nasset-----	Somewhat limited Depth to hard bedrock Slope	0.18 0.16	Very limited Water erosion Depth to hard bedrock Slope	1.00 0.18 0.16	---	
731C2: Nasset-----	Somewhat limited Slope Depth to hard bedrock	0.84 0.18	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.84 0.18	---	
732B: Appleriver-----	Somewhat limited Slope	0.26	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.26	Very limited Depth to saturated zone Too clayey	1.00 0.03
732C: Appleriver-----	Somewhat limited Slope	0.99	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.99	Very limited Depth to saturated zone Too clayey	1.00 0.03

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
735C2:						
Casco-----	Very limited Slope	1.00	Very limited Too sandy Slope Water erosion	1.00 1.00 0.88	---	
Rodman-----	Very limited Slope	1.00	Very limited Too sandy Slope Water erosion	1.00 1.00 0.50	---	
Fox-----	Very limited Slope	1.00	Very limited Water erosion Too sandy Slope	1.00 1.00 1.00	---	
735D2:						
Casco-----	Very limited Slope	1.00	Very limited Too sandy Slope Water erosion	1.00 1.00 0.88	---	
Rodman-----	Very limited Slope	1.00	Very limited Too sandy Slope Water erosion	1.00 1.00 0.50	---	
Fox-----	Very limited Slope	1.00	Very limited Water erosion Too sandy Slope	1.00 1.00 1.00	---	
735E2:						
Casco-----	Very limited Slope Content of large stones	1.00 0.01	Very limited Slope Too sandy Water erosion Content of large stones	1.00 1.00 0.88 0.01	---	
Rodman-----	Very limited Slope	1.00	Very limited Slope Too sandy Water erosion	1.00 1.00 0.50	---	
Fox-----	Very limited Slope	1.00	Very limited Water erosion Slope Too sandy	1.00 1.00 1.00	---	
745B:						
Shullsburg-----	Somewhat limited Depth to soft bedrock Slope	0.65 0.26	Very limited Water erosion Depth to saturated zone Depth to soft bedrock Slope	1.00 1.00 0.65 0.26	Very limited Depth to saturated zone Too clayey Depth to soft bedrock	1.00 0.88 0.65

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features
745C2: Shullsburg-----	Somewhat limited		Very limited		Very limited
	Slope	0.84	Water erosion	1.00	Depth to
	Depth to soft bedrock	0.65	Depth to saturated zone	1.00	saturated zone
			Slope	0.84	Too clayey
			Depth to soft bedrock	0.65	Depth to soft bedrock
752C2: Oneco-----	Somewhat limited		Very limited		---
	Depth to hard bedrock	0.99	Water erosion	1.00	
	Slope	0.84	Depth to hard bedrock	0.99	
			Slope	0.84	
753B: Massbach-----	Somewhat limited		Very limited		Somewhat limited
	Slope	0.16	Water erosion	1.00	Depth to
			Slope	0.16	saturated zone
					Too clayey
753C2: Massbach-----	Somewhat limited		Very limited		Somewhat limited
	Slope	0.84	Water erosion	1.00	Depth to
			Slope	0.84	saturated zone
					Too clayey
802B: Orthents, loamy----	Somewhat limited		Very limited		---
	Slope	0.37	Water erosion	1.00	
			Slope	0.37	
864: Pits, quarries-----	Not rated		Not rated		Not rated
865: Pits, gravel-----	Not rated		Not rated		Not rated
905F: NewGlarus-----	Very limited		Very limited		---
	Depth to hard bedrock	1.00	Water erosion	1.00	
	Slope	1.00	Slope	1.00	
			Depth to hard bedrock	1.00	
Lamoille-----	Very limited		Very limited		---
	Slope	1.00	Water erosion	1.00	
	Content of large stones	0.77	Slope	1.00	
			Content of large stones	0.77	
928D2: NewGlarus-----	Very limited		Very limited		---
	Depth to hard bedrock	1.00	Water erosion	1.00	
	Slope	1.00	Slope	1.00	
			Depth to hard bedrock	1.00	

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
928D2: Palsgrove-----	Very limited Slope Depth to hard bedrock	1.00 0.54	Very limited Water erosion Slope Depth to hard bedrock	1.00 1.00 0.54	Somewhat limited Slope Too clayey Depth to hard bedrock	0.96 0.88 0.54
1107A: Sawmill-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Frequent flooding	1.00 1.00 0.80
3074A: Radford-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Frequent flooding	1.00 0.80
3107A: Sawmill-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Frequent flooding	1.00 1.00 0.80
3451A: Lawson-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.88	Very limited Depth to saturated zone Frequent flooding	1.00 0.80
8070A: Beaucoup-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Occasional flooding	1.00 1.00 0.60
8074A: Radford-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Occasional flooding	1.00 0.60
8076A: Otter-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Occasional flooding	1.00 1.00 0.60

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains	Value	Constructing terraces and diversions	Value	Tile drains and underground outlets	
	Rating class and limiting features		Rating class and limiting features		Rating class and limiting features	Value
8077A: Huntsville-----	Not limited		Somewhat limited Water erosion	0.88	---	
8082A: Millington-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.88	Very limited Ponding Depth to saturated zone Occasional flooding	1.00 1.00 0.60
8103A: Houghton-----	Not limited		Very limited Ponding Depth to saturated zone Excess organic matter	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Excess organic matter Occasional flooding	1.00 1.00 1.00 0.60
8107A: Sawmill-----	Not limited		Very limited Ponding Depth to saturated zone Water erosion	1.00 1.00 0.50	Very limited Ponding Depth to saturated zone Occasional flooding	1.00 1.00 0.60
8210A: Lena-----	Not limited		Very limited Ponding Depth to saturated zone Excess organic matter	1.00 1.00 1.00	Very limited Ponding Depth to saturated zone Excess organic matter Occasional flooding	1.00 1.00 1.00 0.60
8239A: Dorchester-----	Not limited		Very limited Water erosion	1.00	---	
8415A: Orion-----	Not limited		Very limited Water erosion Depth to saturated zone	1.00 1.00	Very limited Depth to saturated zone Occasional flooding	1.00 0.60

Table 18b.--Water Management--Continued

Map symbol and soil name	Constructing grassed waterways and surface drains		Constructing terraces and diversions		Tile drains and underground outlets	
	Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8451A: Lawson-----	Not limited		Very limited Depth to saturated zone Water erosion	1.00 0.88	Very limited Depth to saturated zone Occasional flooding	1.00 0.60
8579A: Beavercreek-----	Very limited Content of large stones	1.00	Very limited Water erosion Content of large stones	1.00 1.00	---	

Table 18c.--Water Management

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table.)

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
21B: Pecatonica-----	Very limited Water erosion	1.00	Not limited	
21C2: Pecatonica-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
22C2: Westville-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
22C3: Westville-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
22D2: Westville-----	Very limited Water erosion Slope	1.00 0.98	Not limited	
29C2: Dubuque-----	Very limited Water erosion Depth to hard bedrock Droughty	1.00 0.99 0.01	Not limited	
29D2: Dubuque-----	Very limited Water erosion Depth to hard bedrock Slope	1.00 0.97 0.60	Not limited	
40C2: Dodgeville-----	Somewhat limited Depth to soft bedrock Droughty Slope	0.94 0.42 0.40	Not limited	
40D2: Dodgeville-----	Somewhat limited Slope Depth to soft bedrock Droughty	0.98 0.94 0.48	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
51A: Muscatune-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
51B: Muscatune-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
61A: Atterberry-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
61B: Atterberry-----	Very limited Depth to saturated zone Water erosion	1.00 1.00	Very limited Wetness	1.00
67A: Harpster-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
68A: Sable-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
86A: Osco-----	Not limited		Not limited	
86B: Osco-----	Not limited		Not limited	
86C: Osco-----	Somewhat limited Slope	0.06	Not limited	
86C2: Osco-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
87B: Dickinson-----	Somewhat limited Droughty	0.26	Not limited	
87C2: Dickinson-----	Somewhat limited Droughty Slope	0.67 0.06	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	Drip or trickle irrigation		
	Rating class and limiting features	Value	Rating class and limiting features	Value
104A: Virgil-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
104B: Virgil-----	Very limited Depth to saturated zone Water erosion	1.00 1.00	Very limited Wetness	1.00
105A: Batavia-----	Not limited		Not limited	
105B: Batavia-----	Very limited Water erosion	1.00	Not limited	
105C: Batavia-----	Very limited Water erosion	1.00	Not limited	
119C2: Elco-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
134B: Camden-----	Very limited Water erosion	1.00	Not limited	
134C2: Camden-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
134C3: Camden-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
134D2: Camden-----	Very limited Water erosion Slope	1.00 0.98	Not limited	
148A: Proctor-----	Not limited		Not limited	
148B: Proctor-----	Not limited		Not limited	
148C2: Proctor-----	Very limited Water erosion Slope	1.00 0.06	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	Drip or trickle irrigation		
	Rating class and limiting features	Value	Rating class and limiting features	Value
152A: Drummer-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
198A: Elburn-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
198B: Elburn-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
199A: Plano-----	Not limited		Not limited	
199B: Plano-----	Not limited		Not limited	
199C2: Plano-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
206A: Thorp-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
219A: Millbrook-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
227B: Argyle-----	Very limited Water erosion	1.00	Not limited	
227C2: Argyle-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
233B: Birkbeck-----	Very limited Water erosion	1.00	Not limited	
233C2: Birkbeck-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
233D2: Birkbeck-----	Very limited Water erosion Slope	1.00 0.98	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	Drip or trickle irrigation		
	Rating class and limiting features	Value	Rating class and limiting features	Value
242A: Kendall-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
242B: Kendall-----	Very limited Depth to saturated zone Water erosion	1.00 1.00	Very limited Wetness	1.00
243A: St. Charles-----	Not limited		Not limited	
243B: St. Charles-----	Very limited Water erosion	1.00	Not limited	
243C2: St. Charles-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
259C2: Assumption-----	Somewhat limited Slope	0.06	Not limited	
272A: Edgington-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
278A: Stronghurst-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
279A: Rozetta-----	Not limited		Not limited	
279B: Rozetta-----	Very limited Water erosion	1.00	Not limited	
280B: Fayette-----	Very limited Water erosion	1.00	Not limited	
280C2: Fayette-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
280C3: Fayette-----	Very limited Water erosion Slope	1.00 0.06	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
280D2: Fayette-----	Very limited Water erosion Slope	1.00 0.98	Not limited	
290C2: Warsaw-----	Somewhat limited Droughty Slope	0.61 0.10	Not limited	
344A: Harvard-----	Not limited		Not limited	
344B: Harvard-----	Very limited Water erosion	1.00	Not limited	
344C2: Harvard-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
361D3: Kidder-----	Very limited Water erosion Slope Droughty	1.00 0.22 0.01	Not limited	
361E2: Kidder-----	Very limited Water erosion Slope	1.00 1.00	Not limited	
363D2: Griswold-----	Somewhat limited Slope	0.22	Not limited	
403D2: Elizabeth-----	Very limited Depth to hard bedrock Droughty Slope	1.00 1.00 0.98	Very limited Depth to bedrock	1.00
403F2: Elizabeth-----	Very limited Depth to hard bedrock Droughty Slope	1.00 1.00 1.00	Very limited Depth to bedrock	1.00
410B: Woodbine-----	Very limited Water erosion Depth to hard bedrock	1.00 0.35	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	Drip or trickle irrigation		
	Rating class and limiting features	Value	Rating class and limiting features	Value
410C2: Woodbine-----	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.06 0.01	Not limited	
410C3: Woodbine-----	Very limited Water erosion Depth to hard bedrock Droughty	1.00 0.35 0.01	Not limited	
410D2: Woodbine-----	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.98 0.05	Not limited	
411B: Ashdale-----	Not limited		Not limited	
411C2: Ashdale-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
412B: Ogle-----	Not limited		Not limited	
412C2: Ogle-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
414B: Myrtle-----	Very limited Water erosion	1.00	Not limited	
414C: Myrtle-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
414C2: Myrtle-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
416B: Durand-----	Not limited		Not limited	
416C2: Durand-----	Very limited Water erosion Slope	1.00 0.06	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
417C2: Derinda-----	Very limited		Not limited	
	Depth to soft bedrock	1.00		
	Water erosion	1.00		
	Depth to saturated zone	0.99		
	Droughty	0.83		
	Slope	0.06		
417C3: Derinda-----	Very limited		Not limited	
	Depth to soft bedrock	1.00		
	Water erosion	1.00		
	Depth to saturated zone	0.99		
	Droughty	0.91		
	Slope	0.06		
417D2: Derinda-----	Very limited		Not limited	
	Depth to soft bedrock	1.00		
	Water erosion	1.00		
	Depth to saturated zone	0.99		
	Slope	0.98		
	Droughty	0.88		
418C2: Schapville-----	Very limited		Not limited	
	Water erosion	1.00		
	Depth to soft bedrock	0.90		
	Slope	0.10		
419B: Flagg-----	Very limited		Not limited	
	Water erosion	1.00		
419C2: Flagg-----	Very limited		Not limited	
	Water erosion	1.00		
	Slope	0.06		
429B: Palsgrove-----	Very limited		Not limited	
	Water erosion	1.00		
429C2: Palsgrove-----	Very limited		Not limited	
	Water erosion	1.00		
	Slope	0.06		

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	Drip or trickle irrigation		
		Rating class and limiting features	Value	Rating class and limiting features
429D2: Palsgrove-----	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.40 0.01	Not limited	
506B: Hitt-----	Very limited Water erosion Depth to hard bedrock	1.00 0.26	Not limited	
506C2: Hitt-----	Very limited Water erosion Depth to hard bedrock Slope	1.00 0.26 0.06	Not limited	
546B: Keltner-----	Somewhat limited Depth to soft bedrock	0.42	Not limited	
546C2: Keltner-----	Somewhat limited Depth to soft bedrock Slope	0.20 0.06	Not limited	
547B: Eleroy-----	Very limited Water erosion Depth to soft bedrock	1.00 0.26	Not limited	
547C2: Eleroy-----	Very limited Water erosion Slope	1.00 0.06	Not limited	
572B: Loran-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
572C: Loran-----	Very limited Depth to saturated zone Depth to soft bedrock Slope	1.00 0.42 0.02	Very limited Wetness	1.00
618C2: Senachwine-----	Very limited Water erosion Droughty Slope	1.00 0.43 0.06	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation	Drip or trickle irrigation		
		Rating class and limiting features	Value	Rating class and limiting features
618C3: Senachwine-----	Very limited Water erosion Droughty Slope	1.00 1.00 0.06		Not limited
618D2: Senachwine-----	Very limited Water erosion Slope Droughty	1.00 0.98 0.25		Not limited
622B: Wyanet-----	Not limited			Not limited
622C2: Wyanet-----	Somewhat limited Slope	0.06		Not limited
656C2: Octagon-----	Not limited			Not limited
656D2: Octagon-----	Somewhat limited Slope	0.22		Not limited
675A: Greenbush-----	Not limited			Not limited
675B: Greenbush-----	Very limited Water erosion	1.00		Not limited
675C: Greenbush-----	Very limited Water erosion Slope	1.00 0.06		Not limited
675C2: Greenbush-----	Very limited Water erosion Slope	1.00 0.06		Not limited
686B: Parkway-----	Not limited			Not limited
686C2: Parkway-----	Somewhat limited Slope	0.06		Not limited
731B: Nasset-----	Very limited Water erosion	1.00		Not limited
731C2: Nasset-----	Very limited Water erosion	1.00		Not limited

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
732B: Appleriver-----	Very limited Depth to saturated zone Water erosion	1.00 1.00	Very limited Wetness	1.00
732C: Appleriver-----	Very limited Water erosion Depth to saturated zone Slope	1.00 1.00 0.06	Very limited Wetness	1.00
735C2: Casco-----	Very limited Water erosion Droughty Slope	1.00 1.00 0.40	Not limited	
Rodman-----	Very limited Droughty Slope	1.00 0.40	Not limited	
Fox-----	Very limited Water erosion Slope	1.00 0.40	Not limited	
735D2: Casco-----	Very limited Water erosion Droughty Slope	1.00 1.00 0.40	Not limited	
Rodman-----	Very limited Droughty Slope	1.00 0.40	Not limited	
Fox-----	Very limited Water erosion Slope	1.00 0.40	Not limited	
735E2: Casco-----	Very limited Droughty Water erosion Slope	1.00 1.00 1.00	Not limited	
Rodman-----	Very limited Droughty Slope	1.00 1.00	Not limited	
Fox-----	Very limited Water erosion Slope	1.00 1.00	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
745B: Shullsburg-----	Very limited Depth to soft bedrock Depth to saturated zone Water erosion Droughty	 1.00 1.00 1.00 0.17	Very limited Wetness	 1.00
745C2: Shullsburg-----	Very limited Depth to soft bedrock Water erosion Depth to saturated zone Droughty	 1.00 1.00 1.00 0.20	Very limited Wetness	 1.00
752C2: Oneco-----	Very limited Water erosion Depth to hard bedrock	 1.00 0.35	Not limited	
753B: Massbach-----	Very limited Water erosion Depth to soft bedrock	 1.00 0.05	Not limited	
753C2: Massbach-----	Very limited Water erosion Depth to soft bedrock	 1.00 0.05	Not limited	
802B: Orthents, loamy----	Very limited Water erosion	 1.00	Not limited	
864: Pits, quarries-----	Not rated		Not rated	
865: Pits, gravel-----	Not rated		Not rated	
905F: NewGlarus-----	Very limited Slope Water erosion Depth to hard bedrock Droughty	 1.00 1.00 0.90 0.01	Not limited	
Lamoille-----	Very limited Slope Water erosion	 1.00 1.00	Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
928D2: NewGlarus-----	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.98 0.80	Not limited	
Palsgrove-----	Very limited Water erosion Slope Depth to hard bedrock	1.00 0.98 0.01	Not limited	
1107A: Sawmill-----	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Wetness	1.00 1.00 1.00
3074A: Radford-----	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Wetness	1.00 1.00
3107A: Sawmill-----	Very limited Ponding Flooding Depth to saturated zone	1.00 1.00 1.00	Very limited Ponding Flooding Wetness	1.00 1.00 1.00
3451A: Lawson-----	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Wetness	1.00 1.00
8070A: Beaucoup-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
8074A: Radford-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
8076A: Otter-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
8077A: Huntsville-----	Not limited		Not limited	

Table 18c.--Water Management--Continued

Map symbol and soil name	Sprinkler irrigation		Drip or trickle irrigation	
	Rating class and limiting features	Value	Rating class and limiting features	Value
8082A: Millington-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
8103A: Houghton-----	Very limited Ponding Depth to saturated zone		Very limited Ponding Wetness	1.00 1.00
8107A: Sawmill-----	Very limited Ponding Depth to saturated zone	1.00 1.00	Very limited Ponding Wetness	1.00 1.00
8210A: Lena-----	Very limited Ponding Depth to saturated zone		Very limited Ponding Wetness	1.00 1.00
8239A: Dorchester-----	Not limited		Not limited	
8415A: Orion-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
8451A: Lawson-----	Very limited Depth to saturated zone	1.00	Very limited Wetness	1.00
8579A: Beavercreek-----	Somewhat limited Droughty	0.90	Not limited	

Table 19.--Engineering Index Properties

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
21B:												
Pecatonica-----	0-3	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	3-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	10-18	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	25-40	5-20
	18-26	Clay loam, sandy clay loam	CL, SC	A-7-6, A-6	0-2	0-5	90-100	80-100	70-95	40-80	37-46	19-25
	26-68	Sandy clay loam, gravelly sandy clay loam, clay loam, loam, sandy loam	CL, SC	A-7-6, A-2-6, A-6	0-2	0-5	85-100	65-100	50-95	30-80	29-46	12-25
	68-80	Loam, sandy loam, gravelly sandy loam	CL, SC	A-6, A-2-4, A-4	0-2	0-5	85-100	65-100	50-95	30-80	24-38	9-19
21C2:												
Pecatonica-----	0-7	Silt loam	CL-ML, CL	A-6, A-4	0	0	100	100	95-100	95-100	25-40	5-17
	7-19	Silt loam, silty clay loam	CL	A-6	0	0	100	100	90-100	85-100	30-41	13-21
	19-60	Clay loam, sandy clay loam, loam	CL, SC	A-6, A-2-6, A-7-6	0-1	0-5	90-100	80-100	45-95	30-80	35-46	17-25
22C2:												
Westville-----	0-9	Silt loam	CL	A-6, A-4	0	0	100	100	90-100	75-100	24-35	8-15
	9-54	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-4	90-100	80-100	67-96	40-80	35-47	17-27
	54-60	Sandy loam, loam, gravelly sandy loam	CL, SC, SC-SM	A-2-4, A-4, A-6	0-2	0-5	90-100	80-100	60-90	30-70	24-33	9-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
22C3: Westville-----	0-3	Clay loam	CL	A-6, A-7-6	0	0-5	90-100	83-100	70-95	40-85	35-47	16-27
	3-39	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-5	90-100	80-100	67-96	40-80	35-47	17-27
	39-60	Sandy loam, loam, gravelly sandy loam	CL, SC, SC-SM	A-2-4, A-4, A-6	0-2	0-5	90-100	80-100	60-90	30-70	24-33	9-15
22D2: Westville-----	0-9	Silt loam	CL	A-6, A-4	0	0	100	100	90-100	75-100	24-35	8-15
	9-54	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-4	90-100	80-100	67-96	40-80	35-47	17-27
	54-60	Sandy loam, loam, gravelly sandy loam	CL, SC, SC-SM	A-2-4, A-4, A-6	0-2	0-5	90-100	80-100	60-90	30-70	24-33	9-15
29C2: Dubuque-----	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	23-36	9-18
	5-26	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	36-47	18-25
	26-31	Clay, silty clay	CH, CL	A-7-6	0	2-10	85-95	80-90	70-85	65-85	49-70	29-44
	31-60	Bedrock	---	---	---	---	---	---	---	---	---	---
29D2: Dubuque-----	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	23-36	9-18
	6-27	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	36-47	18-25
	27-32	Clay, silty clay	CH, CL	A-7-6	0	2-10	85-95	80-90	70-85	65-85	49-70	29-44
	32-60	Bedrock	---	---	---	---	---	---	---	---	---	---
40C2: Dodgeville-----	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	23-36	6-15
	5-24	Silty clay loam, silty clay, silt loam	CH, CL	A-6, A-7-6	0	0-9	90-100	85-100	80-100	72-100	30-53	12-30
	24-33	Silty clay, clay	CH, CL	A-7-6	0	0-9	92-100	90-100	85-100	80-100	49-86	29-59
	33-60	Bedrock, weathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
40D2:												
Dodgeville-----	0-4	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	23-36	6-15
	4-24	Silty clay loam, silty clay, silt loam	CH, CL	A-6, A-7-6	0	0-9	90-100	85-100	80-100	72-100	30-53	12-30
	24-33	Silty clay, clay	CH, CL	A-7-6	0	0-9	92-100	90-100	85-100	80-100	49-86	29-59
	33-60	Bedrock, weathered bedrock	---	---	---	---	---	---	---	---	---	---
51A:												
Muscatune-----	0-16	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	4-14
	16-22	Silty clay loam, silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	35-40	14-20
	22-46	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	46-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	96-100	93-100	24-37	7-18
51B:												
Muscatune-----	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	4-14
	14-42	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	35-46	14-24
	42-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	96-100	93-100	24-37	7-18
61A:												
Atterberry-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-16
	9-17	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	7-18
	17-48	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	95-100	95-100	37-46	16-25
	48-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	95-100	24-37	7-18
61B:												
Atterberry-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-16
	9-13	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	7-18
	13-48	Silty clay loam, silt loam	ML, CL	A-6, A-7-6	0	0	100	100	95-100	95-100	37-46	16-25
	48-60	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	95-100	24-37	7-18

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
67A:												
Harpster-----	0-18	Silty clay loam	CL, CH	A-7-6	0	0	100	95-100	90-100	75-100	37-49	17-25
	18-32	Silty clay loam	CH, CL	A-7-6	0	0	100	95-100	90-100	78-100	37-49	18-28
	32-60	Silt loam, silty clay loam, loam	CH, CL	A-6, A-7	0	0	100	95-100	90-100	73-100	35-47	17-27
68A:												
Sable-----	0-17	Silty clay loam	CH, CL, MH, ML	A-7-6	0	0	100	100	95-100	95-100	41-65	15-35
	17-23	Silty clay loam	CH, CL, MH, ML	A-7-6	0	0	100	100	95-100	95-100	41-65	15-35
	23-60	Silty clay loam, silt loam	CL, CH	A-7-6	0	0	100	100	95-100	95-100	40-55	20-35
86A:												
Osc-----	0-13	Silt loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	7-20
	13-38	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	38-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	35-45	7-25
86B:												
Osc-----	0-14	Silt loam	CL, ML	A-7-6, A-6, A-7-5	0	0	100	100	100	95-100	35-44	13-18
	14-55	Silty clay loam, silt loam	CL	A-7-5, A-7-6	0	0	100	100	100	95-100	40-50	15-25
	55-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	100	95-100	29-40	7-21
86C:												
Osc-----	0-14	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	35-45	10-20
	14-43	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	97-100	95-100	40-50	15-25
	43-60	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	100	97-100	93-100	35-45	15-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
86C2: Osco-----	0-9	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	95-100	35-45	10-20
	9-34	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	40-50	15-25
	34-60	Silt loam, silty clay loam	CL, ML	A-6, A-4	0	0	100	100	95-100	95-100	35-45	7-25
87B: Dickinson-----	0-9	Sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	63-76	24-50	19-25	2-8
	9-17	Sandy loam, fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0	0	100	100	63-87	24-50	19-25	3-9
	17-33	Sandy loam, fine sandy loam	SC, SC-SM	A-4	0	0	100	100	65-87	25-50	17-22	4-9
	33-41	Loamy sand, loamy fine sand, fine sand	SC-SM, SM	A-2-4, A-3	0	0	100	100	58-80	7-25	10-20	NP-5
	41-60	Sand, loamy fine sand, loamy sand	SM, SP-SM	A-2-4, A-3	0	0	100	100	50-80	7-25	6-16	NP-5
87C2: Dickinson-----	0-9	Sandy loam	SC-SM, SC, SM	A-4, A-2-4	0	0	100	100	63-76	24-50	17-30	3-11
	9-29	Fine sandy loam, sandy loam	SC-SM, SC, SM	A-4	0	0	100	100	63-87	24-50	17-30	4-12
	29-35	Loamy sand, loamy fine sand, fine sand	SM, SC-SM, SP-SM	A-2-4, A-3	0	0	100	100	55-80	7-25	9-20	NP-5
	35-60	Sand, loamy fine sand, loamy sand	SP-SM, SM	A-2-4, A-3	0	0	100	100	50-80	7-25	9-14	NP-5
104A: Virgil-----	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-95	23-37	5-16
	7-13	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	23-37	8-19
	13-49	Silty clay loam	CL	A-7-6	0	0	100	100	100	85-100	37-47	18-27
	49-58	Loam	CL	A-6, A-7	0	0	100	100	80-100	55-80	23-37	8-20
	58-60	Sandy loam, loam, silt loam	CL, CL-ML, SM, SC-SM	A-2-4, A-2-6, A-4, A-6	0	0-5	90-100	80-100	55-95	20-80	18-30	NP-7

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
104B:												
Virgil-----	0-6	Silt loam	CL	A-4, A-6	0	0	100	100	90-100	85-95	23-37	5-16
	6-12	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	23-37	8-19
	12-49	Silty clay loam	CL	A-7-6	0	0	100	100	100	85-100	37-47	18-27
	49-58	Loam	CL	A-6, A-7	0	0	100	100	80-100	55-80	23-37	8-20
	58-60	Sandy loam, loam, silt loam	CL, CL-ML, SM, SC-SM	A-2-4, A-2-6, A-4, A-6	0	0-5	90-100	80-100	55-95	20-80	18-30	NP-7
105A:												
Batavia-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	23-38	5-15
	9-41	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	90-100	27-47	12-28
	41-60	Stratified clay loam to sandy loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A- 2-6	0	0-5	90-100	80-90	60-90	30-70	20-35	4-15
105B:												
Batavia-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	23-38	5-15
	9-12	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	23-38	5-15
	12-45	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	90-100	27-47	12-28
	45-60	Stratified clay loam to sandy loam	CL, CL-ML, SC, SC-SM	A-2-6, A-4, A-6	0	0-5	90-100	80-90	60-90	30-70	20-35	4-15
105C:												
Batavia-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	23-38	5-15
	7-45	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	90-100	27-47	12-28
	45-60	Stratified clay loam to sandy loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A- 2-6	0	0-5	90-100	80-90	60-90	30-70	20-35	4-15
119C2:												
Elco-----	0-8	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	90-100	25-40	8-15
	8-31	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	25-45	10-30
	31-60	Silty clay loam, loam, clay	CL	A-6, A-7-6	0	0	100	90-100	80-100	60-95	25-50	10-30

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
134B: Camden-----	0-9	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-15
	9-15	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-35	6-15
	15-34	Silt loam, silty clay loam	CL	A-7-6	0	0	100	97-100	95-100	90-100	35-46	14-24
	34-40	Clay loam, sandy loam, silt loam	CL, ML, SC	A-4, A-6	0	0-5	90-100	90-100	70-85	45-70	25-33	8-14
	40-60	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4	0	0-5	90-100	70-100	35-60	14-40	19-25	1-7
134C2: Camden-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silt loam, silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	95-100	91-100	35-46	14-24
	34-43	Loam, clay loam	CL, SC	A-4, A-6	0	0-5	90-100	90-100	77-96	48-77	25-33	8-14
	43-80	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4, A-4, A-1-b	0	0-5	90-100	80-100	40-89	15-40	19-25	1-7
134C3: Camden-----	0-7	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	100	95-100	35-45	10-20
	7-34	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	97-100	95-100	95-100	35-46	14-24
	34-43	Loam, clay loam	CL, ML, SC	A-4, A-6	0	0	90-100	90-100	70-85	45-70	25-33	8-14
	43-80	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4, A-4, A-1-b	0	0	90-100	80-100	35-60	15-40	19-25	1-7
134D2: Camden-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	95-100	24-37	6-15
	7-34	Silt loam, silty clay loam	CL	A-7-6	0	0	100	97-100	95-100	95-100	35-46	14-24
	34-43	Loam, clay loam	CL, ML, SC	A-4, A-6	0	0-5	90-100	90-100	70-85	45-70	25-33	8-14
	43-80	Stratified loamy sand to sandy loam	SC-SM, SM	A-2-4, A-4, A-1-b	0	0-5	90-100	80-100	35-60	15-40	19-25	1-7

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches						
							4	10	40	200		
	In				Pct	Pct					Pct	
148A: Proctor-----	0-11	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	10-20
	11-27	Silty clay loam, silt loam	CL	A-6, A-4, A- 7-6	0	0	100	100	95-100	85-100	25-50	10-25
	27-44	Clay loam, sandy loam, silt loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6, A- 7-6, A-2-6	0	0	95-100	85-100	75-95	30-85	20-45	5-25
	44-73	Stratified loamy sand to loam	SC-SM, SC, CL-ML, CL	A-6, A-4, A- 2-6	0	0	90-100	80-98	65-95	15-85	20-35	5-20
148B: Proctor-----	0-11	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	90-100	25-40	10-20
	11-28	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4, A-5	0	0	100	100	95-100	90-100	25-50	10-25
	28-33	Loam, clay loam, sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-2-6, A-4, A-6, A- 7-6	0	0	90-100	85-100	75-100	30-85	20-45	5-25
	33-60	Stratified loam to loamy sand	CL, CL-ML, SC, SC-SM	A-4, A-6, A- 2-4, A-2-6	0	0	85-100	80-100	50-100	15-85	20-40	5-20
148C2: Proctor-----	0-8	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	85-100	25-40	10-20
	8-32	Silty clay loam, silt loam	CL	A-6, A-7-6, A-4	0	0	95-100	90-100	85-100	85-100	25-50	10-25
	32-48	Clay loam, sandy loam, loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4, A-6, A-7-6, A-2-6	0	0	90-100	85-100	75-100	30-80	20-45	5-25
	48-60	Stratified loam to sandy loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A- 2-4, A-2-6	0	0	85-100	80-100	50-100	25-80	20-40	5-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
152A: Drummer-----	0-14	Silty clay loam	CL	A-6, A-7	0	0	100	95-100	95-100	85-95	30-50	15-30
	14-41	Silty clay loam, silt loam, silty clay	CL	A-6, A-7	0	0	100	95-100	95-100	85-95	30-50	15-30
	41-47	Loam, silt loam, clay loam, sandy loam	CL, SC	A-6, A-7	0	0-5	95-100	90-100	75-95	40-85	30-50	15-30
	47-60	Stratified loamy sand to silty clay loam	CL, SC	A-2-4, A-4, A-6	0	0-5	95-100	75-95	75-95	15-80	20-35	7-20
198A: Elburn-----	0-13	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-47	10-18
	13-52	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	36-49	17-25
	52-60	Sandy loam, loam, clay loam	CL, CL-ML, SM, SC-SM	A-2, A-4, A-6	0	0	90-100	85-100	60-90	30-85	24-39	1-21
198B: Elburn-----	0-11	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-47	10-18
	11-44	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	36-49	17-25
	44-60	Sandy loam, loam, clay loam, silt loam	CL, CL-ML, SM, SC-SM	A-2, A-4, A-6	0	0	90-100	85-100	60-90	30-85	24-39	1-21
199A: Plano-----	0-14	Silt loam	CL, CL-ML, ML	A-7-6, A-6, A-7-5	0	0	100	100	95-100	90-100	33-45	11-18
	14-49	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	49-60	Loam, clay loam, sandy loam, sandy clay loam	CL, ML, SC, SM	A-4, A-6, A- 2-6, A-2-4	0	0-1	90-100	85-95	60-90	30-75	25-37	7-17
	60-80	Stratified loamy sand to silt loam	SC, SM, CL, ML, SC-SM, CL-ML	A-2-4, A-4, A-1-b	0	0-3	90-100	80-95	35-90	15-65	20-30	2-10

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
199B: Plano-----	0-15	Silt loam	CL, ML	A-7-6, A-6, A-7-5	0	0	100	100	95-100	90-100	33-47	11-18
	15-45	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	29-40	11-25
	45-55	Loam, clay loam, sandy loam, sandy clay loam	CL, ML, SC, SM	A-4, A-6, A- 2-6, A-2-4	0	0-1	90-100	85-95	60-90	30-75	25-37	7-17
	55-80	Stratified loamy sand to silt loam	SC, SM, CL, ML, SC-SM, CL-ML	A-2-4, A-4, A-1-b	0	0-3	90-100	80-95	35-90	15-65	20-30	2-10
199C2: Plano-----	0-8	Silt loam	CL, CL-ML	A-7-6, A-6, A-7-5	0	0	100	100	95-100	90-100	31-45	11-18
	8-41	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-25
	41-53	Loam, clay loam, sandy loam, sandy clay loam	CL, ML, SC, SM	A-4, A-6, A- 2-6, A-2-4	0	0-1	90-100	85-95	60-90	30-75	25-37	7-17
	53-80	Stratified loamy sand to silt loam	SC, SM, CL, ML, SC-SM, CL-ML	A-2-4, A-4, A-1-b	0	0-3	90-100	80-95	35-90	15-65	20-30	2-10
206A: Thorp-----	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	90-100	30-49	7-18
	14-19	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	90-100	28-37	7-17
	19-43	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	95-100	95-100	90-100	32-46	15-25
	43-50	Sandy clay loam, clay loam, silt loam	CL, SC	A-4, A-6, A-7	0	0	90-100	90-100	80-100	40-90	29-42	10-21
	50-65	Stratified sandy loam to silty clay loam	CL-ML, ML, SC-SM, SM, SC, CL	A-2, A-4	0	0	85-100	85-100	65-90	20-85	16-27	2-21

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
219A:												
Millbrook-----	0-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	85-100	20-35	3-15
	14-35	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-45	10-25
	35-44	Clay loam, loam, sandy loam	CL, SC	A-6, A-7	0-1	0-5	95-100	90-100	70-90	40-80	25-50	10-25
	44-60	Stratified sandy loam to clay loam	CL, ML, SC, SM	A-2, A-4, A-6	0-1	0-5	95-100	90-100	70-95	30-80	15-30	NP-15
227B:												
Argyle-----	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	85-100	35-45	13-18
	7-13	Silt loam	CL	A-4, A-6	0	0	100	95-100	95-100	85-100	26-38	9-18
	13-25	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	37-47	19-25
	25-70	Gravelly clay loam, clay loam, gravelly sandy clay loam, loam	CL, SC	A-2-6, A-6, A-7-6	0	0-5	85-100	55-100	23-85	20-75	33-44	17-25
	70-84	Sandy loam, clay loam	CL, ML, SC, SM	A-2-4, A-4, A-6, A-1-b	0-2	0-5	90-100	75-100	30-75	15-65	16-40	2-21
227C2:												
Argyle-----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-100	35-45	13-18
	7-22	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	80-95	37-47	19-25
	22-38	Gravelly clay loam, clay loam, gravelly sandy clay loam	CL, ML, SC, SM	A-7-6, A-2-6, A-4, A-6	0	0-5	85-100	55-100	23-85	20-75	33-44	17-25
	38-70	Gravelly sandy clay loam, gravelly clay loam, clay loam	CL, ML, SC, SM	A-7-6, A-2-6, A-4, A-6	0	0-5	85-100	55-100	23-85	20-75	33-44	17-25
	70-84	Sandy loam, clay loam	CL, ML, SC, SM	A-1-b, A-2-4, A-4, A-6	0-2	0-5	90-100	75-100	30-75	15-65	16-40	2-21
233B:												
Birkbeck-----	0-10	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	11-18
	10-57	Silty clay loam	CL, ML	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	57-60	Loam	CL, ML, SC	A-6, A-4	0	0	90-100	85-100	70-90	45-70	25-33	8-14

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
233C2:												
Birkbeck-----	0-7	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	11-18
	7-46	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	46-57	Loam	CL, SC	A-6, A-4	0	0	90-100	85-100	70-90	45-70	25-33	8-14
	57-60	Loam	CL, SC, SC- SM, CL-ML	A-4, A-6	0-1	0-3	90-100	85-100	70-90	45-70	22-33	4-14
233D2:												
Birkbeck-----	0-6	Silt loam	CL, ML	A-6	0	0	100	100	97-100	95-100	29-37	11-18
	6-43	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-25
	43-60	Loam	CL, ML, SC	A-6, A-4	0	0	90-100	85-100	70-90	45-70	25-33	8-14
242A:												
Kendall-----	0-7	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	95-100	90-100	20-35	5-15
	7-11	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	90-100	20-35	5-15
	11-51	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	90-100	35-45	16-25
	51-58	Loam, clay loam	CL, SC	A-6, A-4	0	0	95-100	80-98	65-98	40-80	25-35	8-15
	58-80	Stratified sandy loam to silt loam	CL-ML, CL, SC-SM, SC	A-4	0	0-3	90-100	80-98	60-95	40-80	20-30	4-10
242B:												
Kendall-----	0-12	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	100	100	95-100	90-100	20-35	5-15
	12-50	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	90-100	35-45	16-25
	50-60	Loam, clay loam	CL, SC	A-6, A-4	0	0	95-100	80-98	65-98	40-80	25-35	8-15
243A:												
St. Charles-----	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	9-51	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	51-60	Stratified sandy loam to clay loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
243B:												
St. Charles-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	8-50	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	50-60	Stratified sandy loam to silt loam to clay loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
243C2:												
St. Charles-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	22-35	7-15
	8-41	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-25
	41-60	Clay loam, silt loam, sandy loam, loam	CL, SC	A-4, A-6	0	0	90-100	75-100	75-95	40-80	20-35	8-20
259C2:												
Assumption-----	0-8	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	25-40	8-20
	8-24	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	30-50	10-30
	24-60	Clay loam, silty clay loam	CL	A-6, A-7	0	0-5	100	95-100	90-100	70-90	35-50	10-30
272A:												
Edgington-----	0-20	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	100	97-100	95-100	24-37	3-13
	20-31	Silt loam	CL, ML	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
	31-55	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	97-100	95-100	37-46	16-24
	55-60	Silt loam	CL	A-6, A-4	0	0	100	100	97-100	95-100	24-37	7-18
278A:												
Stronghurst-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	25-35	5-15
	8-47	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	40-55	20-35
	47-60	Silt loam	CL, CL-ML	A-6, A-4	0	0	100	100	95-100	95-100	25-40	5-20
279A:												
Rozetta-----	0-4	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	4-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-50	Silty clay loam	CL	A-7-6, A-6	0	0	100	100	95-100	95-100	35-50	15-30
	50-60	Silt loam, silty clay loam	CL	A-6, A-4	0	0	100	100	95-100	85-100	25-40	7-20
279B:												
Rozetta-----	0-7	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	95-100	24-35	8-15
	7-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-55	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	95-100	35-50	15-30
	55-60	Silt loam, silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-100	25-40	7-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
280B: Fayette-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	25-35	5-15
	9-39	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-45	15-25
	39-60	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	10-20
280C2: Fayette-----	0-8	Silt loam	CL	A-6, A-7-6, A-4	0	0	100	100	100	95-100	30-45	10-25
	8-64	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-45	15-25
	64-80	Silt loam	CL	A-6, A-4	0	0	100	100	100	95-100	30-40	10-20
280C3: Fayette-----	0-8	Silty clay loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	8-48	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	48-60	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	10-20
280D2: Fayette-----	0-6	Silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	30-45	10-25
	6-48	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	100	95-100	35-45	15-25
	48-60	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	10-20
290C2: Warsaw-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	92-100	72-97	23-36	5-15
	9-22	Loam	CL, ML, SC	A-6, A-4	0	0	90-100	80-100	70-90	45-70	25-33	8-14
	22-25	Gravelly clay loam	SC, SM, CL	A-6, A-7-6	0	0-5	70-85	50-75	40-75	35-65	33-42	12-20
	25-60	Very gravelly sand	SW, GW, SP	A-1-a	0-2	0-5	50-60	30-50	15-30	1-5	17-19	NP-2
344A: Harvard-----	0-16	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	90-100	85-100	20-35	8-15
	16-26	Silty clay loam, silt loam	CL, ML	A-6, A-4, A- 7-6	0	0	100	95-100	90-100	85-100	30-45	10-25
	26-42	Clay loam, silt loam, sandy loam	CL, ML, SM, SC	A-4, A-6, A- 7-6	0	0-3	95-100	85-100	75-90	40-85	25-45	5-25
	42-60	Stratified sand to clay loam	CL, CL-ML, SC-SM, SC	A-4, A-6, A- 2-4, A-2-6	0	0-5	90-100	80-98	40-90	15-70	20-35	5-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
344B:												
Harvard-----	0-9	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	90-100	85-100	20-35	8-15
	9-30	Silty clay loam, silt loam	CL, ML	A-6, A-4, A- 7-6	0	0	100	95-100	90-100	85-100	30-45	10-25
	30-56	Clay loam, silt loam, sandy loam, sandy clay loam, loam	CL, ML, SM, SC	A-4, A-6, A- 7-6	0	0-3	95-100	85-100	75-90	40-85	25-45	5-25
	56-69	Stratified sand to clay loam	CL, CL-ML, SC-SM, SC	A-4, A-6, A- 2-4, A-2-6	0	0-5	90-100	80-98	40-90	15-70	20-35	5-15
344C2:												
Harvard-----	0-7	Silt loam	CL, ML	A-4, A-6	0	0	100	95-100	90-100	85-100	30-40	8-15
	7-32	Silty clay loam, silt loam	CL, ML	A-6, A-7-6, A-4	0	0	100	95-100	90-100	85-100	35-45	10-20
	32-40	Clay loam, silt loam, sandy loam	CL, ML, SM, SC	A-4, A-6, A- 7-6	0	0-3	95-100	85-100	75-90	40-85	30-45	5-20
	40-60	Stratified sand to clay loam	CL, CL-ML, SC-SM, SC	A-4, A-6, A- 2-4, A-2-6	0	0-5	90-100	80-98	40-90	15-70	20-40	NP-20
361D3:												
Kidder-----	0-6	Clay loam, sandy clay loam, loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-100	60-90	35-75	25-40	8-20
	6-26	Clay loam, sandy clay loam, loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-100	60-90	35-75	25-40	8-20
	26-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	60-95	55-90	30-80	20-50	0-20	NP-5
361E2:												
Kidder-----	0-8	Loam	CL, CL-ML, ML	A-4, A-6	0	0	90-100	85-100	70-100	50-75	20-30	3-12
	8-29	Clay loam, sandy clay loam, loam	CL, ML, SC	A-4, A-6	0	0-3	90-100	80-100	60-90	35-75	25-40	8-20
	29-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC-SM, SM	A-1-b, A-2-4, A-4	0	0-10	60-95	55-90	30-80	20-50	0-20	NP-5

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
363D2: Griswold-----	0-8	Loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	90-100	55-80	20-35	5-15
	8-23	Loam, sandy clay loam, clay loam	CL, ML, SC, SM	A-4, A-6	0	0-5	95-100	90-100	80-90	45-80	25-40	8-20
	23-27	Sandy loam, loam, fine sandy loam	CL, CL-ML, SC, SC-SM	A-2-4, A-4, A-6	0-1	0-10	85-95	80-95	60-85	30-55	20-30	4-12
	27-60	Sandy loam, gravelly sandy loam, fine sandy loam	SC, SC-SM, SM	A-2-4, A-4	0-1	0-10	85-95	60-90	50-75	20-45	0-25	NP-8
403D2: Elizabeth-----	0-7	Cobbly silt loam, silt loam	CL, ML	A-6, A-7-6	0-1	0-7	87-100	80-100	70-100	55-95	32-47	11-18
	7-60	Bedrock	---	---	---	---	---	---	---	---	---	---
403F2: Elizabeth-----	0-10	Cobbly silt loam, silt loam	CL, ML	A-6, A-7-6	0-1	0-7	87-100	80-100	70-100	55-95	32-47	11-18
	10-60	Bedrock	---	---	---	---	---	---	---	---	0-14	---
410B: Woodbine-----	0-4	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	31-41	13-19
	4-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	9-15	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-47	17-25
	15-37	Clay loam, sandy clay loam, loam, sandy loam	CL, CL-ML, SC, SC-SM	A-7-6, A-4, A-6	0	0	90-100	80-100	65-95	40-80	34-46	16-25
	37-41	Silty clay, clay, gravelly silty clay, gravelly clay	CH, CL	A-7-6	0-6	0-11	85-100	75-100	70-95	60-95	50-78	29-51
	41-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
410C2: Woodbine-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	31-41	13-19
	8-18	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-47	17-25
	18-43	Clay loam, sandy clay loam, loam	CL, CL-ML, SC, SC-SM	A-7-6, A-4, A-6	0	0	90-100	80-100	65-95	40-80	34-46	16-25
	43-48	Silty clay, clay, gravelly silty clay, gravelly clay	CH, CL	A-7-6	0-6	0-11	85-100	75-100	70-95	60-95	50-78	29-51
	48-60	Bedrock	---	---	---	---	---	---	---	---	---	---
410C3: Woodbine-----	0-5	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-47	17-25
	5-30	Clay loam, sandy clay loam, loam	CL, CL-ML, SC, SC-SM	A-7-6, A-4, A-6	0	0	90-100	80-100	65-95	40-80	34-46	16-25
	30-41	Silty clay, clay, gravelly silty clay, gravelly clay	CH, CL	A-7-6	0-6	0-11	85-100	75-100	70-95	60-95	50-78	29-51
	41-60	Bedrock	---	---	---	---	---	---	---	---	---	---
410D2: Woodbine-----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	31-41	13-19
	7-24	Silt loam, silty clay loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	34-47	16-25
	24-41	Clay loam, sandy clay loam, loam	CL, CL-ML, SC, SC-SM	A-7-6, A-4, A-6	0	0	90-100	80-100	65-95	40-80	34-46	16-25
	41-46	Silty clay, clay, cherty silty clay, cherty clay	CH, CL	A-7-6	0-6	0-11	85-100	75-100	70-95	60-95	50-78	29-51
	46-80	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
411B:												
Ashdale-----	0-15	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	30-40	8-18
	15-43	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-47	17-25
	43-51	Silty clay, clay	CL	A-7-6	0-1	0-5	90-100	80-100	80-100	75-99	35-50	15-30
	51-60	Bedrock	---	---	---	---	---	---	---	---	---	---
411C2:												
Ashdale-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	30-40	8-18
	9-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	35-47	17-25
	48-56	Silty clay, clay	CL	A-7-6	0-1	0-5	90-100	80-100	80-100	75-99	35-50	15-30
	56-60	Bedrock	---	---	---	---	---	---	---	---	---	---
412B:												
Ogle-----	0-11	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	10-18
	11-33	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	95-100	95-100	93-100	35-47	17-25
	33-80	Clay loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	85-100	75-100	58-95	37-46	19-25
412C2:												
Ogle-----	0-9	Silt loam	CL	A-6	0	0	100	100	100	95-100	30-40	10-18
	9-41	Silty clay loam, silt loam	CL	A-7-6	0	0	100	95-100	95-100	93-100	35-47	17-25
	41-60	Clay loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0	0	95-100	85-100	75-100	58-95	37-46	19-25
414B:												
Myrtle-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	33-43	13-18
	8-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	24-37	9-18
	14-42	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	37-47	19-25
	42-60	Clay loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0-3	0-5	95-100	85-100	75-100	45-90	37-46	19-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
414C:												
Myrtle-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	33-43	13-18
	8-42	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	37-47	19-25
	42-60	Clay loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0-3	0-5	95-100	85-100	75-100	45-90	37-46	19-25
414C2:												
Myrtle-----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	33-43	13-18
	7-42	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	37-47	19-25
	42-60	Clay loam, silty clay loam, sandy clay loam	CL	A-6, A-7-6	0-3	0-5	95-100	85-100	75-100	45-90	37-46	19-25
416B:												
Durand-----	0-13	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	35-47	13-18
	13-20	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	37-47	19-25
	20-26	Clay loam, sandy loam, gravelly sandy clay loam	CL, GC, SC	A-2-6, A-6, A-7-6	0-1	0-5	80-100	55-95	47-95	30-85	29-46	12-25
	26-60	Loam, sandy loam, gravelly sandy loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0-2	0-5	75-100	55-100	45-90	25-70	24-37	9-19
416C2:												
Durand-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	33-43	13-18
	9-22	Silty clay loam	CL	A-6, A-7-6	0	0	100	95-100	90-100	85-100	37-47	19-25
	22-60	Clay loam, sandy loam, gravelly sandy clay loam	CL, GC, SC	A-2-6, A-6, A-7-6	0-1	0-5	80-100	55-95	47-95	30-85	29-46	12-25
417C2:												
Derinda-----	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	94-100	87-100	33-43	14-18
	7-18	Silty clay loam	CH, CL, MH, ML	A-7-6	0	0	100	95-100	94-100	87-100	44-51	25-29
	18-25	Loam, silty clay, clay	CH, CL	A-7-6	0	0	85-100	75-100	70-100	60-100	48-55	28-32
	25-60	Bedrock	---	---	0	0	90-100	85-100	80-90	65-90	30-55	15-30

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
417C3:												
Derinda-----	0-3	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	95-100	90-100	25-40	5-15
	3-18	Silty clay loam	CH, CL, MH, ML	A-7-6	0	0	100	95-100	95-100	90-100	40-55	15-25
	18-25	Loam, silty clay, clay	CH, CL	A-7-6	0	0	80-100	75-100	70-100	65-100	45-60	20-30
	25-60	Bedrock	---	---	0	0	90-100	85-100	80-90	65-90	30-55	15-30
417D2:												
Derinda-----	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	95-100	94-100	87-100	33-43	14-18
	5-18	Silty clay loam	CH, CL, MH, ML	A-7-6	0	0	100	95-100	94-100	87-100	44-51	25-29
	18-25	Loam, silty clay, clay	CH, CL	A-7-6	0	0	85-100	75-100	70-100	60-100	48-55	28-32
	25-60	Bedrock	---	---	0	0	90-100	85-100	80-90	65-90	30-55	15-30
418C2:												
Schapville-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	22-40	3-14
	8-26	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-45	15-25
	26-34	Silty clay, clay	CH, CL	A-6, A-7-6	0-1	0-5	90-100	85-100	80-90	65-90	35-55	18-35
	34-60	Bedrock	---	---	---	---	---	---	---	---	---	---
419B:												
Flagg-----	0-4	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	33-43	13-18
	4-11	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	24-37	9-18
	11-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	94-100	92-100	83-100	35-46	17-25
	48-72	Clay loam, sandy clay loam, silty clay loam	CL	A-6, A-7-6	0	0	95-100	85-100	75-100	45-90	30-44	15-25
419C2:												
Flagg-----	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	33-43	13-18
	7-33	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	94-100	92-100	83-100	35-46	17-25
	33-60	Clay loam, sandy clay loam, silty clay loam	CL	A-7-6, A-6	0	0	95-100	85-100	75-100	45-90	30-44	15-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
429B:												
Palsgrove-----	0-10	Silt loam	CL	A-6	0	0	100	100	97-100	93-100	30-37	13-17
	10-48	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	85-100	35-47	17-27
	48-59	Clay, silty clay loam, silty clay	CH, CL	A-7-6, A-7-5	0-2	0-6	93-100	82-94	77-93	67-90	45-95	25-63
	59-60	Bedrock	---	---	---	---	---	---	---	---	---	---
429C2:												
Palsgrove-----	0-7	Silt loam	CL	A-6	0	0	100	100	97-100	93-100	30-37	13-17
	7-42	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	85-100	35-47	17-27
	42-52	Clay, silty clay loam, silty clay	CH, CL	A-7-6, A-7-5	0-2	0-6	93-100	82-94	77-93	67-90	45-95	25-63
	52-60	Bedrock	---	---	---	---	---	---	---	---	---	---
429D2:												
Palsgrove-----	0-5	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	100	95-100	23-35	5-14
	5-44	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	36-46	17-27
	44-49	Clay, silty clay loam, silty clay	CH	A-7-6	0-2	0-5	90-95	90-95	80-95	65-90	55-75	30-45
	49-60	Bedrock	---	---	---	---	---	---	---	---	---	---
506B:												
Hitt-----	0-15	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	90-100	37-47	14-18
	15-19	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	98-100	85-100	37-47	19-25
	19-37	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-5	94-100	85-100	75-100	55-95	37-48	19-26
	37-42	Silty clay, clay	CH, MH	A-7-6	0-2	0-10	90-100	85-100	80-95	60-90	60-75	40-51
	42-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
506C2:												
Hitt-----	0-15	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	90-100	37-47	14-18
	15-19	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	98-100	85-100	37-47	19-25
	19-37	Clay loam, sandy clay loam	CL	A-6, A-7-6	0	0-5	94-100	85-100	75-100	55-95	37-48	19-26
	37-42	Silty clay, clay	CH, MH	A-7-6	0-2	0-10	90-100	85-100	80-95	60-90	60-75	40-51
	42-60	Bedrock	---	---	---	---	---	---	---	---	---	---
546B:												
Keltner-----	0-14	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	30-40	8-15
	14-38	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	35-45	15-25
	38-40	Clay, silty clay, silty clay loam	CH, CL	A-6, A-7-6	0-1	0-5	95-100	85-100	85-100	75-95	30-55	15-35
	40-60	Bedrock	---	---	---	---	---	---	---	---	---	---
546C2:												
Keltner-----	0-9	Silt loam	CL	A-4, A-6	0	0	100	100	95-100	90-100	30-40	8-15
	9-34	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-45	15-25
	34-43	Clay, silty clay, silty clay loam	CH, CL	A-6, A-7-6	0-2	0-5	95-100	85-100	85-100	75-95	30-55	15-35
	43-60	Bedrock	---	---	---	---	---	---	---	---	---	---
547B:												
Eleroy-----	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	80-95	25-40	5-15
	9-38	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	90-100	85-95	30-50	15-30
	38-42	Silty clay loam, silty clay, clay	CH, CL	A-6, A-7-6	0	0-5	95-100	90-100	85-100	75-95	30-55	15-30
	42-60	Bedrock	---	---	---	---	---	---	---	---	---	---
547C2:												
Eleroy-----	0-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	99-100	94-100	33-43	14-18
	11-46	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	99-100	95-100	36-47	17-25
	46-52	Silty clay loam, silty clay, clay	CH, CL	A-6, A-7-6	0	0-5	95-100	85-100	80-100	70-95	44-59	25-36
	52-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
572B: Loran-----	0-12	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	6-15
	12-43	Silty clay loam, silt loam, loam	CL, ML	A-6, A-7-6	0	0	100	95-100	95-100	80-100	35-50	15-25
	43-51	Channery clay, channery silty clay, clay	CL, ML	A-6, A-7-6	0-15	0-10	95-100	95-100	90-100	80-100	30-50	15-35
	51-60	Bedrock	---	---	---	---	---	---	---	---	---	---
572C: Loran-----	0-13	Silt loam	CL, ML	A-4, A-6	0	0	100	100	95-100	90-100	30-40	6-15
	13-38	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	95-100	95-100	80-100	35-50	15-25
	38-40	Channery clay, channery silty clay, clay	CL	A-6, A-7-6	0	0-5	95-100	95-100	90-100	80-100	30-50	15-35
	40-60	Bedrock	---	---	---	---	---	---	---	---	---	---
618C2: Senachwine-----	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	20-30	5-15
	6-27	Clay loam, silty clay loam	CL	A-6, A-7-6	0	0	90-98	85-98	85-95	55-85	35-45	15-20
	27-32	Loam, fine sandy loam	CL, CL-ML	A-6, A-4	0-1	0-3	90-98	85-98	75-95	50-75	30-35	10-15
	32-60	Loam, fine sandy loam	CL, CL-ML	A-4, A-6	0-1	0-3	90-98	85-98	75-95	50-75	25-35	5-15
618C3: Senachwine-----	0-7	Clay loam	CL	A-6, A-4	0	0-2	95-100	90-100	80-100	60-80	30-40	10-20
	7-24	Loam, fine sandy loam	CL, CL-ML	A-6, A-4	0-1	0-3	90-98	85-98	75-95	50-75	30-35	10-15
	24-60	Loam, fine sandy loam	CL, CL-ML	A-4, A-6	0-1	0-3	90-98	85-98	75-95	50-75	25-35	5-15
618D2: Senachwine-----	0-6	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	90-100	80-95	60-85	20-30	5-15
	6-28	Clay loam, silty clay loam	CL	A-6, A-7-6	0	0	90-98	85-98	85-95	55-85	35-45	15-20
	28-34	Loam, fine sandy loam	CL, CL-ML	A-4, A-6	0-1	0-3	90-98	85-98	75-95	50-75	30-35	10-15
	34-60	Loam, fine sandy loam	CL, CL-ML	A-4, A-6	0-1	0-3	90-98	85-98	75-95	50-75	25-35	5-15

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
622B:												
Wyanet-----	0-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	80-100	50-90	20-30	5-15
	12-26	Silty clay loam	CL, ML	A-7-6, A-6	0	0	95-100	95-100	80-100	50-95	37-46	16-24
	26-38	Clay loam, loam	CL	A-6, A-7-6	0	0	90-100	80-100	70-95	50-80	32-44	15-23
	38-60	Loam, sandy loam	CL, CL-ML, SC	A-6, A-4	0	0-3	85-100	80-95	65-88	38-68	20-32	6-13
622C2:												
Wyanet-----	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	80-100	50-90	20-30	5-15
	8-34	Clay loam, loam	CL	A-6, A-7-6	0	0	90-100	80-100	70-95	50-80	32-44	15-23
	34-60	Loam, sandy loam	CL, CL-ML, SC	A-6, A-4	0	0-3	85-100	80-95	65-88	38-68	20-32	6-13
656C2:												
Octagon-----	0-7	Silt loam	CL, CL-ML	A-4	0	0	98-100	95-100	80-100	65-90	20-30	5-15
	7-32	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	85-100	70-100	55-90	30-40	10-20
	32-60	Loam	CL, CL-ML	A-4	0	0-3	90-100	80-98	65-95	50-65	10-25	3-15
656D2:												
Octagon-----	0-7	Silt loam	CL, CL-ML, ML	A-4	0	0	98-100	95-100	80-100	65-90	20-30	3-10
	7-28	Clay loam, loam, silty clay loam	CL	A-6	0	0	95-100	85-100	70-100	55-90	30-40	10-20
	28-60	Loam	CL, CL-ML	A-4	0	0-3	90-100	80-98	65-95	50-65	5-25	4-10
675A:												
Greenbush-----	0-9	Silt loam	CL, ML	A-4, A-6, A-7-6	0	0	100	100	100	95-100	29-41	9-17
	9-16	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	26-39	9-19
	16-46	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	37-47	18-25
	46-60	Silt loam	CL	A-6	0	0	100	100	100	95-100	29-39	12-19
675B:												
Greenbush-----	0-6	Silt loam	CL, ML	A-6, A-7-6	0	0	100	100	100	95-100	31-41	11-17
	6-17	Silt loam	CL, ML	A-4, A-6	0	0	100	100	100	95-100	26-39	9-19
	17-75	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	95-100	37-47	18-25
	75-80	Silt loam	CL	A-6	0	0	100	100	100	95-100	27-38	12-19

[illegible]

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
					Pct	Pct						
732B: Appleriver-----	In				Pct	Pct					Pct	
	0-14	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-15
	14-34	Silty clay loam, silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	90-100	25-40	10-20
	34-58	Silty clay, silty clay loam, clay	CL, CH, ML, MH	A-6, A-7-6	0-1	0-5	95-100	90-100	85-100	80-95	30-55	15-30
	58-60	Bedrock	---	---	---	---	---	---	---	---	---	---
732C: Appleriver-----	0-13	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	90-100	25-40	5-15
	13-34	Silty clay loam, silt loam	CL	A-6	0	0	100	100	95-100	90-100	25-40	10-20
	34-58	Silty clay, silty clay loam, clay	CL, CH	A-6, A-7-6	0-1	0-5	95-100	90-100	85-100	80-95	30-55	15-30
	58-60	Bedrock	---	---	---	---	---	---	---	---	---	---
735C2: Casco-----	0-6	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	95-100	85-100	75-100	55-85	17-29	3-12
	6-15	Clay loam, sandy clay loam, gravelly loam, silty clay loam	CL, GC, SC	A-7-6, A-6, A-2-4	0-2	0-5	80-100	55-100	50-97	30-85	23-47	9-27
	15-60	Stratified gravel to sand	SP, GP, GP- GM, SP-SM	A-1-a, A-2-4, A-3	0-3	0-10	60-90	10-85	5-60	1-15	0-14	NP
Rodman-----	0-6	Gravelly sandy loam	SC-SM, SC, SP-SM	A-1-b, A-2	0	0-2	75-85	55-85	40-70	10-40	15-25	NP-10
	6-10	Gravelly loam, sandy loam, loam	CL, SC, SC- SM, SM	A-1-b, A-2, A-4	0	0-2	70-85	50-85	40-75	20-65	10-30	NP-15
	10-60	Stratified very gravelly coarse sand to sand	SW-SM, SC-SM, SP	A-1-a, A-1-b	0-2	2-5	60-75	22-75	10-40	2-15	6-16	NP-5

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
735C2:												
Fox-----	0-4	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	4-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	7-22	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	22-39	Clay loam, sandy clay loam, gravelly loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	39-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-b, A-1-a, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP
735D2:												
Casco-----	0-6	Silt loam	CL-ML, CL, ML	A-4, A-6	0	0	95-100	85-100	75-100	55-85	17-29	3-12
	6-15	Clay loam, sandy clay loam, gravelly loam, silty clay loam	CL, SC, GC	A-7-6, A-6, A-2-4	0-2	0-5	80-100	55-100	50-97	30-85	23-47	9-27
	15-60	Stratified gravel to sand	SP, SP-SM, GP-GM, GP	A-1-a, A-2-4, A-3	0-3	0-10	60-90	10-85	5-60	1-15	0-14	NP
Rodman-----	0-6	Gravelly sandy loam	SC-SM, SC, SP-SM	A-1-b, A-2	0	0-2	75-85	55-85	40-70	10-40	15-25	NP-10
	6-10	Gravelly loam, sandy loam, loam	CL, SC, SC- SM, SM	A-1-b, A-2, A-4	0	0-2	70-85	50-85	40-75	20-65	10-30	NP-15
	10-60	Stratified very gravelly coarse sand to sand	SW-SM, SC-SM, SP	A-1-a, A-1-b	0-2	2-5	60-75	22-75	10-40	2-15	6-16	NP-5

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
735D2:												
Fox-----	0-4	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	4-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	7-22	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	22-39	Clay loam, sandy clay loam, gravelly loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	39-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-b, A-1-a, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP
735E2:												
Casco-----	0-5	Silt loam	CL-ML, CL, ML	A-4	0	0	95-100	85-100	75-100	55-85	17-29	3-12
	5-13	Clay loam, sandy clay loam, gravelly loam, silty clay loam	CL, SC, GC	A-7-6, A-6, A-2-4	0-2	0-5	80-100	55-100	50-97	30-85	23-47	9-27
	13-60	Stratified gravel to sand	SP, SP-SM, GP-GM, GP	A-1-a, A-2-4, A-3	0-3	0-10	60-90	10-85	5-60	1-15	0-14	NP
Rodman-----	0-6	Gravelly sandy loam	SC-SM, SC, SP-SM	A-1-b, A-2	0	0-2	75-85	55-85	40-70	10-40	15-25	NP-10
	6-10	Gravelly loam, sandy loam, loam	CL, SC, SC- SM, SM	A-1-b, A-2, A-4	0	0-2	70-85	50-85	40-75	20-65	10-30	NP-15
	10-60	Stratified very gravelly coarse sand to sand	SW-SM, SC-SM, SP	A-1-a, A-1-b	0-2	2-5	60-75	22-75	10-40	2-15	6-16	NP-5

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
735E2:												
Fox-----	0-7	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	95-100	85-98	70-95	15-30	3-15
	7-21	Silty clay loam, silt loam	CL, ML	A-6, A-7-6	0	0-1	95-100	85-100	75-100	70-95	25-50	10-25
	21-37	Clay loam, sandy clay loam, gravelly loam	CL, ML, SC, SM	A-2-6, A-6, A-7-6	0-1	0-5	65-100	50-100	35-95	30-80	25-45	10-25
	37-60	Stratified gravelly sand to extremely gravelly coarse sand	GP, GP-GM, SP, SP-SM	A-1-b, A-1-a, A-3	0-3	0-10	30-100	15-85	10-70	2-10	0-14	NP
745B:												
Shullsburg-----	0-11	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-90	20-40	1-15
	11-20	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	90-100	85-90	30-45	11-25
	20-28	Silty clay, clay	CH, CL	A-7-6	0	0	100	85-100	80-100	80-95	40-70	20-45
	28-60	Bedrock	---	---	---	---	---	---	---	---	---	---
745C2:												
Shullsburg-----	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	100	90-100	85-90	20-40	1-15
	8-20	Silty clay loam, silt loam	CL	A-7-6, A-6	0	0	100	100	90-100	85-90	30-45	11-25
	20-28	Silty clay, clay	CH, CL	A-7-6	0	0	100	85-100	80-100	80-95	40-70	20-45
	28-60	Bedrock	---	---	---	---	---	---	---	---	---	---
752C2:												
Oneco-----	0-6	Silt loam	CL	A-4, A-6	0	0	100	100	100	90-100	25-35	9-19
	6-14	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	100	90-100	35-50	15-30
	14-37	Clay loam, sandy clay loam, silty clay loam	CL	A-6, A-7-6	0-1	0-5	95-100	90-100	85-100	65-95	35-50	12-25
	37-41	Clay, silty clay	CH, CL, MH, ML	A-7-5	0-5	0-10	90-100	90-100	80-95	60-90	45-75	20-35
	41-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	---

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
753B:												
Massbach-----	0-7	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	7-11	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	95-100	20-30	5-15
	11-39	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	30-45	15-25
	39-46	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7-6	0-1	0-5	95-100	90-100	85-100	75-95	30-55	15-35
	46-60	Bedrock	---	---	---	---	---	---	---	---	---	---
753C2:												
Massbach-----	0-8	Silt loam	CL	A-6	0	0	100	100	95-100	90-100	30-40	10-20
	8-39	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	95-100	90-100	30-45	15-25
	39-46	Silty clay, silty clay loam, clay	CH, CL	A-6, A-7-6	0-1	0-5	95-100	90-100	85-100	75-95	30-55	15-35
	46-60	Bedrock	---	---	---	---	---	---	---	---	---	---
802B:												
Orthents, loamy	0-6	Loam	CL	A-6, A-7-6	0-1	0-5	95-100	90-100	70-100	50-80	33-45	15-21
	6-60	Loam, silt loam, clay loam	CL	A-6, A-7-6	0-1	0-5	95-100	90-100	70-100	50-80	33-43	15-21
864.												
Pits, quarries												
865.												
Pits, gravel												
905F:												
NewGlarus-----	0-5	Silt loam	CL	A-6, A-7-6	0	0	100	100	99-100	94-100	20-37	5-18
	5-22	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	92-100	82-100	82-100	77-100	32-47	13-25
	22-34	Channery silty clay, clay, silty clay	CH, CL	A-7-6	0	0-10	80-100	55-100	52-100	48-100	49-86	29-59
	34-60	Bedrock	---	---	---	---	---	---	---	---	---	---

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
905F:												
Lamoille-----	0-6	Silt loam	CL	A-6, A-4	0	0	100	100	95-100	95-100	24-35	8-15
	6-10	Silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	90-100	90-100	90-100	22-38	7-19
	10-38	Cobbly silty clay, silty clay loam, gravelly clay, clay, clay loam	CH, CL, GC, SC	A-7-6	0	5-25	65-95	55-85	50-80	40-70	43-63	25-40
	38-60	Very cobbly silt loam, cobbly clay loam, cobbly loam	GC, SC	A-2-6, A-6, A-7-6	0	10-50	30-75	25-65	15-55	12-45	31-54	13-32
928D2:												
NewGlarus-----	0-8	Silt loam	CL	A-6, A-7-6	0	0	100	100	99-100	94-100	20-37	5-18
	8-24	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	92-100	82-100	82-100	77-100	32-47	13-25
	24-36	Channery silty clay, clay, silty clay	CH, CL	A-7-6	0	0-10	80-100	55-100	52-100	48-100	49-86	29-59
	36-60	Bedrock	---	---	---	---	---	---	---	---	---	---
Palsgrove-----												
	0-5	Silt loam	CL	A-6	0	0	100	100	97-100	93-100	30-37	13-17
	5-44	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	98-100	85-100	35-47	17-27
	44-49	Clay, silty clay loam, silty clay	CH, CL	A-7-6, A-7-5	0-2	0-6	93-100	82-94	77-93	67-90	45-95	25-63
	49-60	Bedrock	---	---	---	---	---	---	---	---	---	---
1107A:												
Sawmill-----	0-29	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	30-50	15-30
	29-38	Silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-100	30-50	15-30
	38-60	Silty clay loam, clay loam, loam	CL	A-6, A-4, A-7	0	0	100	100	85-100	70-95	25-50	8-25

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10	4	10	40	200		
					inches	inches						
	In				Pct	Pct					Pct	
3074A:												
Radford-----	0-12	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	85-100	28-36	5-15
	12-33	Silt loam	CL, ML	A-6, A-4	0	0	100	100	95-100	85-100	28-36	5-15
	33-60	Silt loam, silty clay loam, clay loam	CL	A-6, A-7	0	0	100	100	85-100	70-95	35-50	15-25
3107A:												
Sawmill-----	0-26	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-50	15-30
	26-54	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	30-50	15-30
	54-72	Silty clay loam, clay loam, silt loam	CL, SC	A-4, A-6, A- 7-6	0	0	100	90-100	75-100	40-95	20-50	8-30
3451A:												
Lawson-----	0-14	Silt loam	ML, CL, CL-ML	A-4, A-6, A- 7-6	0	0	100	100	95-100	85-100	25-45	6-18
	14-33	Silt loam, silty clay loam	ML, CL, CL-ML	A-6, A-7-6, A-4	0	0	100	100	95-100	85-100	25-47	6-21
	33-80	Silty clay loam, silt loam	CL	A-6, A-7-6	0	0	100	100	90-100	60-100	27-41	12-21
8070A:												
Beaucoup-----	0-15	Silty clay loam	ML, MH, CL	A-7-6, A-7-5	0	0	100	100	95-100	85-100	47-57	18-24
	15-48	Silty clay loam	CL	A-6, A-7-6	0	0	100	100	95-100	85-100	37-49	19-25
	48-60	Stratified silt loam to silty clay loam	CL	A-6, A-7-6	0	0	100	100	90-100	65-95	24-41	9-21
	60-80	Stratified silt loam to silty clay loam	CL, CL-ML	A-4, A-6, A- 7-6	0	0	100	100	90-100	60-95	20-41	6-21
8074A:												
Radford-----	0-21	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	100	97-100	95-100	85-100	24-37	5-15
	21-29	Stratified silt loam to silty clay loam	CL	A-6, A-4	0	0	100	97-100	95-100	85-100	24-37	7-17
	29-60	Silty clay loam	CL	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
8076A: Otter-----	0-30	Silt loam	CL	A-6, A-4, A-7-6	0	0	100	95-100	90-100	80-100	25-45	7-20
	30-35	Silt loam, loam, silty clay loam	CL	A-7-6, A-6	0	0	100	95-100	90-100	80-100	30-45	10-20
	35-60	Silt loam, sandy loam, silty clay loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-7-6	0	0	90-100	80-100	55-95	45-85	25-45	5-20
8077A: Huntsville-----	0-27	Silt loam	CL	A-6	0	0	100	95-100	90-100	85-100	25-40	10-20
	27-52	Silt loam	CL	A-6	0	0	100	95-100	90-100	85-100	20-35	10-20
	52-80	Silt loam, loam	CL, CL-ML, SC, SC-SM	A-2, A-4, A-6	0	0	95-100	90-100	85-95	30-85	20-35	5-20
8082A: Millington-----	0-26	Silt loam	CL, ML, CL-ML	A-4, A-6	0	0	95-100	90-100	80-100	70-95	25-35	5-20
	26-36	Loam, silt loam, clay loam	CL, ML	A-6, A-7-6	0	0	95-100	80-100	75-100	65-90	28-50	10-22
	36-62	Stratified sandy loam to silty clay loam	CL, ML	A-4, A-7-6, A-6	0	0	90-100	80-100	60-95	40-85	20-45	5-20
8103A: Houghton-----	0-60	Muck	PT	A-8	0	0	0	0	0	0	---	---
8107A: Sawmill-----	0-26	Silty clay loam	CL, ML	A-7-6	0	0	100	97-100	95-100	85-100	40-46	16-21
	26-53	Silty clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
	53-60	Silty clay loam, clay loam	CL	A-7-6, A-6	0	0	100	97-100	85-100	80-95	37-46	16-22
8210A: Lena-----	0-19	Muck	PT	A-8	0	0	0	0	0	0	---	---
	19-60	Muck	PT	A-8	0	0	0	0	0	0	---	---
8239A: Dorchester-----	0-6	Silt loam	CL, CL-ML, ML	A-4	0	0	95-100	95-100	80-100	70-95	25-35	5-10
	6-60	Stratified silt loam, silty clay loam, clay loam	CL, ML	A-6, A-7-6	0	0	100	100	95-100	90-95	35-45	10-20

Table 19.--Engineering Index Properties--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10	3-10						
					inches	inches	4	10	40	200		
	In				Pct	Pct					Pct	
8415A: Orion-----	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	80-100	25-35	4-12
	6-25	Silt loam, stratified silt loam to very fine sand	CL, CL-ML	A-4	0	0	100	100	90-100	70-80	20-30	4-10
	25-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	85-100	85-100	20-40	4-18
8451A: Lawson-----	0-14	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	100	90-100	85-100	20-40	5-20
	14-33	Silt loam, silty clay loam	CL, CL-ML	A-4	0	0	100	100	90-100	85-100	20-30	5-10
	33-80	Silty clay loam, silt loam	CL	A-6, A-7	0	0	100	100	90-100	60-100	20-45	10-25
8579A: Beavercreek----	0-4	Silt loam	CL-ML, ML	A-4	0	0-6	90-100	80-100	75-100	60-90	17-26	2-10
	4-18	Stratified gravelly silt loam, stratified very gravelly silt loam	SM, CL-ML, CL	A-2-4, A-4	0	1-25	70-98	40-95	35-95	25-95	17-31	2-12
	18-60	Stratified very gravelly loam, stratified extremely gravelly loam to sand	GW-GM, SC-SM, GC	A-1-a, A-2-4	0	20-60	45-80	20-65	15-60	5-50	16-30	2-12

Table 20.--Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
21B:	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
Pecatonica-----	0-3	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	3-10	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.49	.49			
	10-18	1-7	66-81	18-31	1.20-1.60	0.6-2	0.20-0.22	0.0-2.9	0.5-1.0	.43	.43			
	18-26	25-58	15-40	27-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.28	.28			
	26-68	25-65	17-40	18-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.0-0.5	.28	.28			
	68-80	23-65	20-50	15-27	1.45-1.65	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.28	.28			
21C2:														
Pecatonica-----	0-7	0-7	68-82	18-25	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.8-2.8	.43	.43	5	6	48
	7-19	0-7	63-80	20-30	1.30-1.50	0.6-2	0.18-0.22	0.0-2.9	0.5-1.0	.43	.43			
	19-60	20-65	10-60	25-35	1.45-1.65	0.6-2	0.15-0.19	3.0-5.9	0.2-0.5	.28	.28			
22C2:														
Westville-----	0-9	2-30	50-83	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	9-54	20-55	20-45	25-35	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	54-60	30-70	15-45	15-22	1.40-1.70	0.6-2	0.07-0.15	0.0-2.9	0.0-0.5	.24	.24			
22C3:														
Westville-----	0-3	20-45	20-45	25-35	1.30-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32	4	6	48
	3-39	20-55	20-45	25-35	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	39-60	30-70	15-45	15-22	1.40-1.70	0.6-2	0.07-0.15	0.0-2.9	0.0-0.5	.24	.24			
22D2:														
Westville-----	0-9	2-30	50-83	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.32	.32	5	6	48
	9-54	20-55	20-45	25-35	1.35-1.55	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	54-60	30-70	15-45	15-22	1.40-1.70	0.6-2	0.07-0.15	0.0-2.9	0.0-0.5	.24	.24			
29C2:														
Dubuque-----	0-5	1-15	65-80	15-27	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.43	.43	4	6	48
	5-26	0-7	58-74	26-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.2-0.5	.37	.37			
	26-31	5-15	25-50	40-60	1.50-1.60	0.06-0.2	0.12-0.15	6.0-8.9	0.0-0.5	.20	.20			
	31-60	---	---	---	---	0.0-0.06	---	---	---	---	---			
29D2:														
Dubuque-----	0-6	1-15	65-80	15-27	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	2.0-3.0	.43	.43	2	6	48
	6-27	0-7	58-74	26-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.2-0.5	.37	.37			
	27-32	5-15	25-50	40-60	1.50-1.60	0.06-0.2	0.12-0.15	6.0-8.9	0.0-0.5	.20	.20			
	32-60	---	---	---	---	0.0-0.06	---	---	---	---	---			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
40C2:														
Dodgeville-----	0-5	1-10	70-80	15-26	1.10-1.35	0.6-2	0.20-0.22	0.0-2.9	3.0-5.0	.28	.28	4	5	56
	5-24	1-10	55-70	20-40	1.25-1.55	0.2-2	0.09-0.22	6.0-8.9	0.5-2.0	.37	.37			
	24-33	1-15	19-45	40-80	1.25-1.55	0.06-0.2	0.06-0.13	6.0-8.9	0.0-0.4	.20	.20			
	33-60	---	---	---	---	0.06-2	---	---	---	---	---			
40D2:														
Dodgeville-----	0-4	1-10	70-80	15-26	1.10-1.35	0.6-2	0.20-0.22	0.0-2.9	3.0-5.0	.28	.28	4	5	56
	4-24	1-10	55-70	20-40	1.25-1.55	0.2-2	0.09-0.22	6.0-8.9	0.5-2.0	.37	.37			
	24-33	1-15	19-45	40-80	1.25-1.55	0.06-0.2	0.06-0.13	6.0-8.9	0.0-0.4	.20	.20			
	33-60	---	---	---	---	0.06-2	---	---	---	---	---			
51A:														
Muscataune-----	0-16	2-7	66-74	24-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	3.5-5.0	.28	.28	5	6	48
	16-22	2-7	58-73	25-35	1.30-1.50	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	22-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	46-60	2-7	66-83	15-30	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.2	.49	.49			
51B:														
Muscataune-----	0-14	2-7	66-83	24-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	14-42	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	42-60	2-7	66-83	15-30	1.35-1.60	0.6-2	0.19-0.26	0.0-5.9	0.0-0.2	.49	.49			
61A:														
Atterberry-----	0-9	2-7	68-78	15-27	1.25-1.45	0.6-2	0.19-0.26	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-17	2-7	69-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.1-1.0	.43	.43			
	17-48	2-7	60-73	25-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	48-60	2-7	66-80	15-27	1.30-1.50	0.6-2	0.17-0.22	0.0-2.9	0.1-0.5	.49	.49			
61B:														
Atterberry-----	0-9	2-7	68-78	15-27	1.25-1.45	0.6-2	0.19-0.26	0.0-2.9	1.5-3.5	.37	.37	5	6	48
	9-13	2-7	69-83	15-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	0.1-1.0	.43	.43			
	13-48	2-7	60-74	25-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	48-60	2-7	45-80	15-27	1.30-1.50	0.6-2	0.17-0.22	0.0-2.9	0.1-0.5	.49	.49			
67A:														
Harpster-----	0-18	0-15	50-73	27-37	1.05-1.25	0.6-2	0.21-0.24	3.0-5.9	2.0-5.5	.24	.24	5	4L	86
	18-32	0-15	50-73	27-37	1.20-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	32-60	0-30	35-83	10-35	1.25-1.55	0.6-2	0.17-0.22	3.0-5.9	0.0-0.5	.43	.43			
68A:														
Sable-----	0-17	0-7	58-73	27-35	1.15-1.35	0.6-2	0.21-0.23	3.0-5.9	5.0-6.0	.24	.24	5	6	48
	17-23	0-7	58-73	27-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	2.0-4.0	.24	.24			
	23-60	0-7	58-76	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
86A:	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
Osc-----	0-13	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.28	.28	5	6	48
	13-38	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	38-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
86B:														
Osc-----	0-14	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	14-55	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	55-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.49	.49			
86C:														
Osc-----	0-14	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.28	.28	5	6	48
	14-43	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	43-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
86C2:														
Osc-----	0-9	0-7	67-80	20-26	1.25-1.30	0.6-2	0.22-0.24	3.0-5.9	2.0-3.0	.37	.37	5	6	48
	9-34	0-7	58-76	24-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	34-60	0-7	63-80	20-30	1.35-1.40	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
87B:														
Dickinson-----	0-9	52-75	12-38	10-18	1.50-1.55	2-6	0.12-0.15	0.0-2.9	1.0-2.0	.15	.15	4	3	86
	9-17	52-70	12-38	10-18	1.50-1.55	2-6	0.12-0.15	0.0-2.9	0.5-1.5	.15	.15			
	17-33	52-75	10-38	10-15	1.45-1.55	2-6	0.12-0.15	0.0-2.9	0.5-1.0	.24	.24			
	33-41	75-90	1-20	4-10	1.55-1.65	6-20	0.08-0.10	0.0-2.9	0.0-0.5	.15	.15			
	41-60	75-95	1-20	4-10	1.60-1.70	6-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.05			
87C2:														
Dickinson-----	0-9	52-70	12-38	10-18	1.50-1.55	2-6	0.12-0.15	0.0-2.9	0.5-2.0	.17	.17	4	3	86
	9-29	52-75	10-38	10-15	1.45-1.55	2-6	0.12-0.15	0.0-2.9	0.5-1.0	.15	.15			
	29-35	75-90	1-20	4-10	1.55-1.65	6-20	0.08-0.10	0.0-2.9	0.0-0.5	.17	.17			
	35-60	75-95	1-20	4-10	1.60-1.70	6-20	0.02-0.04	0.0-2.9	0.0-0.5	.15	.15			
104A:														
Virgil-----	0-7	0-10	60-80	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	7-13	0-10	60-80	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.5-1.5	.43	.43			
	13-49	2-20	45-70	27-35	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	0.2-1.0	.37	.37			
	49-58	25-50	30-50	15-27	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.2-0.5	.32	.32			
	58-60	20-80	20-60	5-27	1.45-1.75	0.6-6	0.05-0.11	0.0-2.9	0.0-0.5	.24	.24			
104B:														
Virgil-----	0-6	0-10	60-80	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	6-12	0-10	60-80	15-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.5-1.5	.43	.43			
	12-49	2-20	45-70	27-35	1.35-1.55	0.6-2	0.22-0.24	0.0-2.9	0.2-1.0	.37	.37			
	49-58	25-50	30-50	15-27	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.2-0.5	.32	.32			
	58-60	20-80	20-60	5-27	1.45-1.75	0.6-6	0.05-0.11	0.0-2.9	0.0-0.5	.24	.24			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
105A:														
Batavia-----	0-9	0-5	68-80	20-27	1.35-1.55	0.6-2	0.22-0.25	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	9-41	0-10	55-80	20-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	41-60	20-70	10-55	15-30	1.50-1.80	0.6-6	0.07-0.11	0.0-2.9	0.0-0.5	.32	.32			
105B:														
Batavia-----	0-9	0-5	68-80	20-27	1.35-1.55	0.6-2	0.22-0.25	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	9-12	0-5	69-85	15-26	1.35-1.55	0.6-2	0.21-0.24	0.0-2.9	0.5-1.0	.43	.43			
	12-45	0-10	55-80	20-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	45-60	20-70	10-55	15-30	1.50-1.80	0.6-6	0.07-0.11	0.0-2.9	0.0-0.5	.32	.32			
105C:														
Batavia-----	0-7	0-5	68-80	20-27	1.35-1.55	0.6-2	0.22-0.25	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	7-45	0-10	55-80	20-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	45-60	20-70	10-55	15-30	1.50-1.80	0.6-6	0.07-0.11	0.0-2.9	0.0-0.5	.32	.32			
119C2:														
Elco-----	0-8	0-7	66-80	20-27	1.20-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	8-31	0-7	58-77	23-35	1.25-1.45	0.6-2	0.18-0.21	3.0-5.9	0.0-0.5	.37	.37			
	31-60	15-35	20-60	25-45	1.45-1.70	0.06-0.6	0.14-0.20	6.0-8.9	0.0-0.2	.28	.28			
134B:														
Camden-----	0-9	2-7	66-83	14-27	1.35-1.55	0.6-2	0.21-0.25	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-15	2-7	66-83	14-27	1.35-1.55	0.6-2	0.21-0.25	0.0-2.9	0.1-0.5	.49	.49			
	15-34	2-7	58-71	22-35	1.40-1.60	0.6-2	0.14-0.24	3.0-5.9	0.1-0.5	.37	.37			
	34-40	30-50	28-50	18-30	1.45-1.65	0.6-2	0.11-0.22	0.0-2.9	0.0-0.5	.32	.32			
	40-60	65-85	1-25	5-20	1.40-1.70	0.6-6	0.12-0.22	0.0-2.9	0.0-0.5	.28	.28			
134C2:														
Camden-----	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	30-50	28-48	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	65-80	10-25	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.3	.28	.28			
134C3:														
Camden-----	0-7	2-7	58-71	27-35	1.30-1.45	0.6-2	0.18-0.22	3.0-5.9	0.2-1.0	.37	.37	4	6	48
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	30-50	28-48	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	65-80	10-25	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.5	.28	.28			
134D2:														
Camden-----	0-7	2-7	66-83	15-27	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	0.5-2.0	.43	.43	5	6	48
	7-34	2-7	58-71	25-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.1-0.5	.37	.37			
	34-43	30-50	28-50	22-30	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.0-0.5	.32	.32			
	43-80	65-80	10-25	5-15	1.45-1.65	2-6	0.06-0.10	0.0-2.9	0.0-0.5	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
148A:														
Proctor-----	0-11	0-15	58-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-27	0-15	50-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	27-44	15-70	5-67	18-35	1.30-1.55	0.6-2	0.13-0.19	3.0-5.9	0.2-1.0	.32	.32			
	44-73	15-85	0-80	5-25	1.40-1.70	0.6-6	0.07-0.17	0.0-2.9	0.0-0.5	.28	.28			
148B:														
Proctor-----	0-11	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	11-28	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	28-33	15-70	0-67	18-32	1.30-1.55	0.6-2	0.13-0.16	3.0-5.9	0.2-1.0	.32	.32			
	33-60	15-85	0-80	5-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.28	.28			
148C2:														
Proctor-----	0-8	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-3.5	.37	.37	5	6	48
	8-32	0-10	55-75	25-35	1.20-1.45	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	32-48	20-70	0-64	16-35	1.30-1.55	0.6-6	0.13-0.16	3.0-5.9	0.2-1.0	.32	.32			
	48-60	15-85	0-80	10-20	1.40-1.70	0.6-6	0.07-0.19	0.0-2.9	0.2-0.5	.28	.28			
152A:														
Drummer-----	0-14	0-15	50-73	27-35	1.10-1.30	0.6-2	0.21-0.23	0.0-2.9	5.0-7.0	.24	.24	5	6	48
	14-41	0-15	50-80	20-42	1.20-1.45	0.6-2	0.21-0.24	3.0-5.9	0.0-1.0	.37	.37			
	41-47	15-55	12-70	15-33	1.30-1.55	0.6-2	0.17-0.20	3.0-5.9	0.0-0.5	.32	.32			
	47-60	15-80	0-75	10-32	1.40-1.70	0.6-2	0.11-0.19	0.0-2.9	0.0-0.5	.32	.32			
198A:														
Elburn-----	0-13	0-10	63-78	22-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	13-52	0-10	57-75	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	52-60	15-70	0-70	15-30	1.50-1.70	0.6-6	0.12-0.18	0.0-2.9	0.0-0.2	.24	.24			
198B:														
Elburn-----	0-11	0-10	63-78	22-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	5	6	48
	11-44	0-10	57-75	25-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	44-60	15-70	0-70	15-30	1.50-1.70	0.6-6	0.12-0.18	0.0-2.9	0.0-0.2	.24	.24			
199A:														
Plano-----	0-14	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	14-49	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	49-60	30-70	10-50	15-32	1.50-1.70	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.28	.28			
	60-80	39-89	3-51	5-20	1.60-1.80	2-6	0.09-0.14	0.0-2.9	0.1-0.5	.20	.20			
199B:														
Plano-----	0-15	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	15-45	0-10	55-80	20-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.2-1.0	.37	.37			
	45-55	30-70	10-50	15-32	1.50-1.70	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.28	.28			
	55-80	39-89	3-51	5-20	1.60-1.80	2-6	0.09-0.14	0.0-2.9	0.1-0.5	.20	.20			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
199C2:														
Plano-----	0-8	0-10	63-82	18-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	8-41	0-10	55-80	20-35	1.20-1.40	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	41-53	30-70	10-50	15-32	1.50-1.70	0.6-6	0.09-0.16	0.0-2.9	0.1-0.5	.28	.28			
	53-80	39-89	3-51	5-20	1.60-1.80	2-6	0.09-0.14	0.0-2.9	0.1-0.5	.20	.20			
206A:														
Thorp-----	0-14	2-15	58-78	20-27	1.15-1.35	0.2-0.6	0.22-0.24	0.0-2.9	4.0-6.0	.28	.28	5	6	48
	14-19	3-15	60-79	18-25	1.30-1.50	0.2-0.6	0.20-0.22	0.0-2.9	0.5-1.0	.43	.43			
	19-43	3-15	50-75	22-35	1.35-1.55	0.06-0.2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	43-50	10-55	15-72	18-30	1.40-1.60	0.06-0.2	0.15-0.22	3.0-5.9	0.0-0.5	.32	.32			
	50-65	15-75	1-80	5-30	1.50-1.70	2-6	0.05-0.13	0.0-2.9	0.0-0.5	.28	.28			
219A:														
Millbrook-----	0-14	0-15	58-82	18-27	1.40-1.60	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	14-35	0-15	50-75	25-35	1.45-1.65	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	35-44	5-62	18-35	18-35	1.45-1.70	0.6-2	0.12-0.19	3.0-5.9	0.2-0.5	.32	.32			
	44-60	20-80	5-40	10-30	1.50-1.75	0.6-2	0.11-0.19	0.0-2.9	0.2-0.5	.28	.28			
227B:														
Argyle-----	0-7	1-15	65-72	20-27	1.25-1.45	0.6-2	0.23-0.25	0.0-2.9	3.0-4.0	.37	.37	5	6	48
	7-13	5-20	65-74	15-26	1.30-1.50	0.6-2	0.21-0.24	0.0-2.9	0.5-1.0	.43	.43			
	13-25	0-15	58-65	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	25-70	25-65	10-40	25-35	1.40-1.60	0.6-2	0.05-0.18	0.0-2.9	0.0-0.5	.24	.28			
	70-84	35-85	1-35	5-30	1.45-1.70	0.6-2	0.15-0.18	0.0-2.9	0.0-0.5	.24	.24			
227C2:														
Argyle-----	0-7	1-15	65-72	20-27	1.25-1.45	0.6-2	0.23-0.25	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	7-22	0-15	58-65	27-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	22-38	25-65	10-40	25-35	1.40-1.60	0.6-2	0.05-0.18	0.0-2.9	0.0-0.5	.24	.28			
	38-70	25-65	10-40	25-35	1.40-1.60	0.6-2	0.05-0.18	0.0-2.9	0.0-0.5	.24	.28			
	70-84	35-85	1-35	5-30	1.45-1.70	0.6-2	0.15-0.18	0.0-2.9	0.0-0.5	.28	.28			
233B:														
Birkbeck-----	0-10	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	10-57	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	57-60	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.37	.43			
233C2:														
Birkbeck-----	0-7	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	1.0-2.5	.43	.43	5	6	48
	7-46	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	46-57	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.37			
	57-60	30-50	28-50	17-27	1.65-1.85	0.2-0.6	0.06-0.12	0.0-2.9	0.0-0.5	.37	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
233D2:														
Birkbeck-----	0-6	2-7	66-78	20-27	1.40-1.60	0.6-2	0.17-0.21	0.0-2.9	1.0-2.5	.43	.43	5	6	48
	6-43	2-7	58-71	27-35	1.35-1.55	0.6-2	0.16-0.20	3.0-5.9	0.1-0.5	.37	.37			
	43-60	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.37	.43			
242A:														
Kendall-----	0-7	0-10	65-86	14-25	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-11	0-10	65-86	14-25	1.35-1.55	0.6-2	0.20-0.22	0.0-2.9	0.1-1.0	.49	.49			
	11-51	0-10	55-73	27-35	1.30-1.50	0.6-2	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	51-58	30-50	33-50	15-27	1.45-1.55	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.32			
	58-80	30-55	25-50	10-20	1.55-1.75	0.6-2	0.11-0.15	0.0-2.9	0.1-0.3	.32	.32			
242B:														
Kendall-----	0-12	0-10	65-86	14-25	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	12-50	0-10	55-73	27-35	1.30-1.50	0.6-2	0.14-0.18	3.0-5.9	0.1-0.5	.37	.37			
	50-60	30-50	33-50	15-27	1.45-1.55	0.6-2	0.11-0.14	0.0-2.9	0.1-0.5	.32	.32			
243A:														
St. Charles-----	0-9	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	9-51	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	51-60	30-65	33-50	15-30	1.30-1.50	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
243B:														
St. Charles-----	0-8	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	8-50	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	50-60	30-60	25-50	15-30	1.30-1.50	0.6-6	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
243C2:														
St. Charles-----	0-8	0-10	63-80	20-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	5	6	48
	8-41	0-10	55-73	25-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	41-60	30-60	25-50	15-30	1.30-1.50	0.6-2	0.11-0.16	0.0-2.9	0.0-0.5	.32	.32			
259C2:														
Assumption-----	0-8	0-7	66-73	20-27	1.25-1.45	0.6-2	0.23-0.25	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	8-24	0-7	58-66	25-35	1.20-1.40	0.6-2	0.18-0.22	3.0-5.9	0.0-1.0	.37	.37			
	24-60	20-30	25-50	25-45	1.40-1.60	0.06-0.6	0.16-0.20	6.0-8.9	0.0-0.5	.28	.28			
272A:														
Edgington-----	0-20	2-7	66-83	15-27	1.20-1.40	0.6-2	0.22-0.26	0.0-2.9	4.5-6.0	.28	.28	5	6	48
	20-31	2-7	66-83	15-27	1.40-1.60	0.2-0.6	0.17-0.21	0.0-2.9	0.1-1.0	.43	.43			
	31-55	2-7	58-71	27-35	1.35-1.55	0.6-2	0.18-0.21	3.0-5.9	0.5-1.5	.37	.37			
	55-60	2-7	66-83	15-27	1.40-1.60	0.6-2	0.19-0.26	0.0-2.9	0.0-0.5	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
278A:														
Stronghurst-----	0-8	1-5	68-79	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	8-47	1-4	61-77	22-35	1.30-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	47-60	1-4	69-79	20-27	1.35-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
279A:														
Rozetta-----	0-4	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	4-11	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.49	.49			
	11-50	0-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.2-0.5	.37	.37			
	50-60	0-7	63-80	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.2-0.5	.49	.49			
279B:														
Rozetta-----	0-7	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	7-11	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.1-1.0	.49	.49			
	11-55	0-7	58-73	27-35	1.35-1.55	0.6-2	0.18-0.22	3.0-5.9	0.0-0.5	.37	.37			
	55-60	0-7	63-80	20-30	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-0.5	.49	.49			
280B:														
Fayette-----	0-9	0-7	66-85	15-27	1.30-1.35	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	9-39	0-7	58-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	39-60	0-7	67-78	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
280C2:														
Fayette-----	0-8	0-7	66-75	25-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	8-64	0-7	58-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	64-80	0-7	67-78	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
280C3:														
Fayette-----	0-8	0-7	61-73	27-32	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37	4	6	48
	8-48	0-7	58-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	48-60	0-7	67-78	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
280D2:														
Fayette-----	0-6	0-7	66-75	25-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.43	.43	5	6	48
	6-48	0-7	58-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.37	.37			
	48-60	0-7	67-78	22-26	1.45-1.50	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
290C2:														
Warsaw-----	0-9	3-30	53-70	15-27	1.15-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.28	.28	4	5	56
	9-22	30-50	28-50	20-27	1.45-1.65	0.6-2	0.11-0.14	0.0-2.9	0.5-1.5	.28	.32			
	22-25	20-35	30-53	27-35	1.55-1.75	0.6-2	0.13-0.17	3.0-5.9	0.0-0.5	.28	.32			
	25-60	90-97	3-5	0-5	1.35-1.55	20-60	0.03-0.05	0.0-2.9	0.0-0.5	.02	.05			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
344A:	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
Harvard-----	0-16	0-15	58-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	16-26	0-15	50-75	25-35	1.25-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.37	.37			
	26-42	15-60	10-70	15-35	1.30-1.60	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	42-60	30-87	0-65	5-30	1.40-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.5	.28	.28			
344B:														
Harvard-----	0-9	0-15	58-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-30	0-15	50-75	25-35	1.25-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.37	.37			
	30-56	15-60	10-70	15-35	1.30-1.60	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	56-69	30-87	0-65	5-30	1.40-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.5	.28	.28			
344C2:														
Harvard-----	0-7	0-15	58-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	7-32	0-15	50-75	25-35	1.25-1.55	0.6-2	0.15-0.20	3.0-5.9	0.2-1.0	.37	.37			
	32-40	15-60	10-70	15-35	1.30-1.60	0.6-2	0.12-0.19	3.0-5.9	0.0-0.5	.32	.32			
	40-60	30-87	0-65	5-30	1.40-1.70	0.6-6	0.05-0.15	0.0-2.9	0.0-0.5	.28	.28			
361D3:														
Kidder-----	0-6	25-65	5-50	20-30	1.50-1.65	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32	4	6	48
	6-26	25-65	5-50	20-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	26-60	55-75	0-44	6-15	1.45-1.65	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
361E2:														
Kidder-----	0-8	25-50	28-50	10-25	1.35-1.55	0.6-2	0.18-0.22	0.0-2.9	1.0-2.0	.32	.32	5	5	56
	8-29	25-65	5-50	20-30	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	29-60	55-75	0-44	6-15	1.45-1.65	2-6	0.06-0.13	0.0-2.9	0.0-0.5	.20	.24			
363D2:														
Griswold-----	0-8	25-50	28-50	15-25	1.10-1.30	0.6-2	0.16-0.22	0.0-2.9	2.0-4.0	.28	.28	5	5	56
	8-23	20-60	10-52	20-32	1.20-1.40	0.6-2	0.14-0.19	0.0-2.9	0.2-1.0	.32	.32			
	23-27	40-70	10-50	10-20	1.40-1.60	0.6-2	0.12-0.14	0.0-2.9	0.1-0.5	.24	.24			
	27-60	50-75	10-45	5-15	1.45-1.65	0.6-6	0.11-0.13	0.0-2.9	0.0-0.5	.20	.24			
403D2:														
Elizabeth-----	0-7	5-30	52-68	18-27	1.15-1.25	0.6-2	0.18-0.24	0.0-2.9	2.5-5.0	.24	.24	2	4L	86
	7-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
403F2:														
Elizabeth-----	0-10	5-30	52-68	18-27	1.15-1.25	0.6-2	0.18-0.24	0.0-2.9	2.5-5.0	.24	.24	1	4L	86
	10-60	---	---	---	---	0.06-0.6	0.00-0.00	---	---	---	---			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
410B:														
Woodbine-----	0-4	0-7	60-85	20-27	1.15-1.35	0.6-2	0.20-0.24	0.0-2.9	1.0-2.0	.43	.43	3	6	48
	4-9	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.49	.49			
	9-15	0-7	58-75	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	15-37	25-55	20-50	18-35	1.40-1.60	0.6-2	0.12-0.19	3.0-5.9	0.2-0.5	.32	.32			
	37-41	5-15	30-55	40-70	1.25-1.45	0.06-0.2	0.08-0.12	6.0-8.9	0.2-0.5	.20	.20			
	41-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
410C2:														
Woodbine-----	0-8	0-7	60-85	20-27	1.15-1.35	0.6-2	0.20-0.24	0.0-2.9	0.5-1.5	.43	.43	3	6	48
	8-18	0-7	58-73	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	18-43	25-55	20-50	24-35	1.40-1.60	0.6-2	0.12-0.19	3.0-5.9	0.2-0.5	.32	.32			
	43-48	5-15	30-55	40-70	1.25-1.45	0.06-0.2	0.08-0.12	6.0-8.9	0.2-0.5	.20	.20			
	48-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
410C3:														
Woodbine-----	0-5	0-7	58-73	25-35	1.30-1.45	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37	2	6	48
	5-30	25-55	20-50	24-35	1.40-1.60	0.6-2	0.12-0.19	3.0-5.9	0.2-0.5	.32	.32			
	30-41	5-15	30-55	40-70	1.25-1.45	0.06-0.2	0.08-0.12	6.0-8.9	0.2-0.5	.20	.20			
	41-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
410D2:														
Woodbine-----	0-7	0-7	60-85	20-27	1.15-1.35	0.6-2	0.20-0.24	0.0-2.9	0.5-1.5	.43	.43	3	6	48
	7-24	0-7	55-85	24-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	24-41	25-55	20-50	24-35	1.40-1.60	0.6-2	0.12-0.19	3.0-5.9	0.2-0.5	.32	.32			
	41-46	5-15	30-55	40-70	1.25-1.45	0.06-0.2	0.08-0.12	6.0-8.9	0.2-0.5	.20	.20			
	46-80	---	---	---	---	0.01-0.2	---	---	---	---	---			
411B:														
Ashdale-----	0-15	0-7	65-85	20-27	1.20-1.40	0.6-2	0.22-0.25	0.0-2.9	3.0-5.0	.28	.28	3	6	48
	15-43	0-7	60-75	25-35	1.35-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	43-51	0-7	30-60	40-60	1.25-1.45	0.06-0.2	0.18-0.20	3.0-5.9	0.0-0.3	.20	.20			
	51-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
411C2:														
Ashdale-----	0-9	0-7	65-85	20-27	1.20-1.40	0.6-2	0.22-0.25	0.0-2.9	2.0-4.0	.32	.32	3	6	48
	9-48	0-7	60-75	25-35	1.35-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	48-56	0-7	30-60	40-60	1.25-1.45	0.06-0.2	0.18-0.20	3.0-5.9	0.0-0.3	.20	.20			
	56-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
412B:														
Ogle-----	0-11	0-7	60-85	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	11-33	0-7	50-75	25-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	33-80	15-50	20-55	27-35	1.45-1.65	0.6-2	0.07-0.10	3.0-5.9	0.0-0.5	.28	.28			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
412C2:														
Ogle-----	0-9	0-7	60-85	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	9-41	0-7	50-75	25-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	41-60	15-50	20-55	27-35	1.45-1.65	0.6-2	0.07-0.10	3.0-5.9	0.0-0.5	.28	.28			
414B:														
Myrtle-----	0-8	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-14	0-10	55-80	15-26	1.25-1.40	0.6-2	0.21-0.23	0.0-2.9	0.0-0.5	.43	.43			
	14-42	0-7	50-70	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	42-60	10-53	20-55	27-35	1.45-1.65	0.6-2	0.07-0.10	3.0-5.9	0.0-0.5	.28	.28			
414C:														
Myrtle-----	0-8	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	8-42	0-7	50-70	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	42-60	10-53	20-55	27-35	1.45-1.65	0.6-2	0.07-0.10	3.0-5.9	0.0-0.5	.28	.28			
414C2:														
Myrtle-----	0-7	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.37	.37	5	6	48
	7-42	0-7	50-70	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	42-60	10-53	20-55	27-35	1.45-1.65	0.6-2	0.07-0.10	3.0-5.9	0.0-0.5	.28	.28			
416B:														
Durand-----	0-13	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.28	.28	5	6	48
	13-20	0-7	50-70	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	20-26	20-60	22-45	18-35	1.40-1.60	0.6-2	0.07-0.19	3.0-5.9	0.0-0.2	.28	.28			
	26-60	30-60	25-50	15-27	1.45-1.70	0.6-2	0.06-0.15	0.0-2.9	0.0-0.1	.28	.32			
416C2:														
Durand-----	0-9	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	5	6	48
	9-22	0-7	50-70	27-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	22-60	20-60	22-45	18-35	1.40-1.60	0.6-2	0.07-0.19	3.0-5.9	0.0-0.2	.28	.28			
417C2:														
Derinda-----	0-7	0-10	68-78	22-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	3	6	48
	7-18	0-10	50-65	35-40	1.35-1.55	0.06-0.2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	18-25	1-25	35-54	40-45	1.40-1.60	0.06-0.2	0.09-0.13	3.0-5.9	0.1-0.5	.32	.32			
	25-60	---	---	---	1.45-1.70	0.0-0.06	0.00-0.00	---	---	---	---			
417C3:														
Derinda-----	0-3	18-26	45-56	22-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	0.5-1.5	.43	.43	2	6	48
	3-18	0-12	49-60	35-40	1.35-1.55	0.06-0.2	0.18-0.20	3.0-5.9	0.5-1.0	.43	.43			
	18-25	0-12	35-56	40-42	1.40-1.60	0.06-0.2	0.09-0.13	3.0-5.9	0.1-0.5	.32	.37			
	25-60	---	---	---	1.45-1.70	0.0-0.06	0.00-0.00	---	---	---	---			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
417D2:														
Derinda-----	0-5	0-10	68-78	22-27	1.30-1.50	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	3	6	48
	5-18	0-10	50-65	35-40	1.35-1.55	0.06-0.2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	18-25	1-25	35-54	40-45	1.40-1.60	0.06-0.2	0.09-0.13	3.0-5.9	0.1-0.5	.32	.32			
	25-60	---	---	---	1.45-1.70	0.0-0.06	0.00-0.00	---	---	---	---			
418C2:														
Schapville-----	0-8	20-28	48-56	20-27	1.10-1.25	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.37	.37	4	6	48
	8-26	15-22	44-52	27-40	1.25-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	26-34	5-11	38-56	35-45	1.45-1.65	0.06-0.2	0.08-0.10	3.0-5.9	0.1-0.5	.32	.32			
	34-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
419B:														
Flagg-----	0-4	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	6	48
	4-11	0-10	55-80	15-26	1.25-1.40	0.6-2	0.21-0.23	0.0-2.9	0.0-0.5	.49	.49			
	11-48	0-15	50-70	25-35	1.30-1.50	0.6-2	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
	48-72	15-58	20-50	22-35	1.45-1.60	0.6-2	0.07-0.10	0.0-2.9	0.0-0.2	.28	.28			
419C2:														
Flagg-----	0-7	0-7	60-80	20-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.8-2.5	.43	.43	5	6	48
	7-33	0-15	50-70	25-35	1.30-1.50	0.6-2	0.14-0.20	3.0-5.9	0.0-0.5	.37	.37			
	33-60	15-58	20-50	22-35	1.45-1.60	0.6-2	0.07-0.10	0.0-2.9	0.0-0.2	.28	.28			
429B:														
Palsgrove-----	0-10	1-19	60-72	21-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	3	6	48
	10-48	1-20	55-70	25-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.3-1.0	.37	.37			
	48-59	10-20	20-65	35-75	1.20-1.40	0.06-0.2	0.08-0.10	6.0-8.9	0.0-0.3	.32	.32			
	59-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
429C2:														
Palsgrove-----	0-7	1-19	60-72	21-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.5-1.5	.43	.43	3	6	48
	7-42	1-20	55-70	25-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.3-1.0	.37	.37			
	42-52	10-20	20-65	35-75	1.20-1.40	0.06-0.2	0.08-0.10	6.0-8.9	0.0-0.3	.20	.20			
	52-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
429D2:														
Palsgrove-----	0-5	7-12	61-72	21-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	0.5-1.5	.43	.43	3	6	48
	5-44	4-11	59-68	25-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.3-1.0	.37	.37			
	44-49	5-21	23-50	35-75	1.20-1.40	0.06-0.2	0.08-0.10	6.0-8.9	0.0-0.3	.32	.32			
	49-60	---	---	---	---	0.06-0.6	---	---	---	---	---			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
506B:	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
Hitt-----	0-15	0-10	65-75	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-5.0	.37	.37	3	6	48
	15-19	0-20	53-65	27-35	1.20-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	19-37	15-50	23-55	27-37	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.4	.32	.32			
	37-42	0-15	30-45	55-70	1.30-1.55	0.06-0.2	0.08-0.12	3.0-5.9	0.0-0.2	.20	.20			
	42-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
506C2:														
Hitt-----	0-15	0-10	65-75	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.37	.37	3	6	48
	15-19	0-20	53-65	27-35	1.20-1.50	0.6-2	0.18-0.20	3.0-5.9	0.2-1.0	.37	.37			
	19-37	15-50	23-55	27-37	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.0-0.4	.32	.32			
	37-42	0-15	30-45	55-70	1.30-1.55	0.06-0.2	0.08-0.12	3.0-5.9	0.0-0.2	.20	.20			
	42-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
546B:														
Keltner-----	0-14	0-7	66-90	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.28	.28	4	6	48
	14-38	0-7	58-73	27-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.43	.43			
	38-40	0-20	35-62	38-50	1.40-1.60	0.06-0.2	0.04-0.06	3.0-5.9	0.0-0.5	.37	.37			
	40-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
546C2:														
Keltner-----	0-9	0-7	66-80	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-3.0	.28	.28	4	6	48
	9-34	0-7	58-73	27-35	1.25-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.37	.37			
	34-43	0-20	35-62	38-50	1.40-1.60	0.06-0.2	0.04-0.06	3.0-5.9	0.0-0.5	.37	.37			
	43-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
547B:														
Eleroy-----	0-9	6-12	61-71	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	9-38	4-10	47-67	27-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	38-42	4-15	35-56	35-50	1.40-1.60	0.0000-0.06	0.11-0.18	3.0-5.9	0.1-0.5	.37	.37			
	42-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
547C2:														
Eleroy-----	0-11	0-7	63-78	22-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	4	6	48
	11-46	0-7	58-75	25-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	46-52	5-20	30-65	35-50	1.40-1.60	0.0015-0.06	0.11-0.18	3.0-5.9	0.1-0.5	.37	.37			
	52-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
572B:														
Loran-----	0-12	0-7	66-80	20-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	4	6	48
	12-43	0-7	45-78	22-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	43-51	5-35	15-60	40-50	1.50-1.70	0.06-0.2	0.04-0.08	3.0-5.9	0.0-0.5	.32	.32			
	51-60	---	---	---	---	0.01-0.2	---	---	---	---	---			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
572C:														
Loran-----	0-13	0-7	66-80	20-27	1.10-1.30	0.6-2	0.22-0.24	0.0-2.9	4.0-5.0	.28	.28	4	6	48
	13-38	0-7	45-78	22-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	38-40	5-35	15-60	35-50	1.50-1.70	0.06-0.2	0.04-0.08	3.0-5.9	0.0-0.5	.32	.32			
	40-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
618C2:														
Senachwine-----	0-6	15-40	30-66	19-25	1.20-1.65	0.6-2	0.17-0.26	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	6-27	15-40	20-58	27-35	1.40-1.70	0.6-2	0.07-0.21	3.0-5.9	0.0-0.5	.37	.37			
	27-32	20-45	18-65	18-27	1.60-1.80	0.2-0.6	0.07-0.17	0.0-2.9	0.0-0.5	.32	.37			
	32-60	20-45	18-65	15-25	1.75-1.95	0.2-0.6	0.01-0.03	0.0-2.9	0.0-0.5	.32	.37			
618C3:														
Senachwine-----	0-7	15-40	25-58	27-35	1.35-1.50	0.6-2	0.17-0.19	3.0-5.9	0.5-2.0	.32	.32	3	6	48
	7-24	20-45	18-65	20-27	1.60-1.80	0.2-0.6	0.07-0.17	0.0-2.9	0.0-0.5	.32	.37			
	24-60	20-45	18-65	15-25	1.75-1.95	0.2-0.6	0.01-0.03	0.0-2.9	0.0-0.5	.32	.37			
618D2:														
Senachwine-----	0-6	15-40	30-66	19-25	1.20-1.65	0.6-2	0.17-0.26	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	6-28	15-40	20-58	27-35	1.40-1.70	0.6-2	0.07-0.21	3.0-5.9	0.0-0.5	.37	.37			
	28-34	20-45	18-65	15-27	1.60-1.80	0.2-0.6	0.07-0.17	0.0-2.9	0.0-0.5	.37	.43			
	34-60	20-45	18-65	15-25	1.75-1.95	0.2-0.6	0.01-0.03	0.0-2.9	0.0-0.5	.37	.43			
622B:														
Wyanet-----	0-12	13-38	50-65	12-22	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	2.0-4.0	.28	.28	5	5	56
	12-26	0-15	58-71	27-35	1.35-1.55	0.2-0.6	0.18-0.20	3.0-5.9	0.5-1.5	.37	.37			
	26-38	28-50	28-45	22-32	1.40-1.55	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	38-60	30-60	30-50	10-20	1.50-1.70	0.2-0.6	0.08-0.13	0.0-2.9	0.0-0.5	.28	.32			
622C2:														
Wyanet-----	0-8	13-38	50-65	12-22	1.30-1.45	0.6-2	0.20-0.24	0.0-2.9	1.0-3.0	.28	.28	4	5	56
	8-34	28-50	28-45	22-32	1.40-1.55	0.2-0.6	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
	34-60	30-60	30-50	10-20	1.50-1.70	0.2-0.6	0.08-0.13	0.0-2.9	0.0-0.5	.28	.32			
656C2:														
Octagon-----	0-7	10-35	50-75	15-27	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	7-32	10-45	21-65	22-34	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	32-60	35-50	30-50	10-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			
656D2:														
Octagon-----	0-7	10-35	50-75	15-27	1.30-1.40	0.6-2	0.20-0.24	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	7-28	10-45	21-65	22-34	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
	28-60	35-50	30-50	10-20	1.70-1.90	0.2-0.6	0.05-0.10	0.0-2.9	0.0-0.2	.37	.37			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
675A: Greenbush-----	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
	0-9	0-7	68-85	15-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	9-16	0-7	66-85	15-27	1.30-1.35	0.6-2	0.18-0.20	0.0-2.9	0.5-1.0	.43	.43			
	16-46	0-7	58-74	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	46-60	0-7	66-82	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
675B: Greenbush-----	0-6	0-7	68-82	18-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	6-17	0-7	66-85	15-27	1.30-1.35	0.6-2	0.18-0.20	0.0-2.9	0.5-1.0	.43	.43			
	17-75	0-7	58-74	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	75-80	0-7	66-82	18-27	1.35-1.45	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.49	.49			
675C: Greenbush-----	0-6	0-7	68-82	18-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	2.0-3.0	.37	.37	5	6	48
	6-46	0-7	58-74	26-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	46-60	0-7	66-82	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
675C2: Greenbush-----	0-6	0-7	68-82	18-25	1.25-1.30	0.6-2	0.21-0.23	0.0-2.9	1.0-3.0	.37	.37	5	6	48
	6-46	0-7	58-74	27-35	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	46-60	0-7	66-82	18-27	1.35-1.45	0.6-2	0.18-0.20	3.0-5.9	0.0-0.5	.49	.49			
686B: Parkway-----	0-16	0-7	66-82	18-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	3.0-4.0	.28	.28	5	6	48
	16-49	0-7	50-73	25-35	1.25-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.43	.43			
	49-60	15-50	20-65	20-30	1.40-1.70	0.6-2	0.18-0.20	0.0-2.9	0.0-0.5	.32	.32			
686C2: Parkway-----	0-9	0-7	66-82	18-27	1.25-1.45	0.6-2	0.23-0.26	0.0-2.9	2.0-3.0	.28	.28	5	6	48
	9-40	0-15	50-73	25-35	1.25-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.43	.43			
	40-60	15-50	20-65	20-30	1.40-1.70	0.6-2	0.07-0.11	0.0-2.9	0.0-0.5	.32	.32			
731B: Nasset-----	0-7	8-13	67-87	18-24	1.25-1.30	0.6-2	0.21-0.23	3.0-5.9	3.0-4.0	.37	.37	4	6	48
	7-11	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.43	.43			
	11-41	2-12	51-71	26-34	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	1.0-2.0	.37	.37			
	41-53	18-28	19-45	40-55	1.50-1.60	0.06-0.2	0.12-0.15	6.0-8.9	0.0-0.5	.32	.32			
	53-60	---	---	---	---	0.0-0.06	---	---	---	---	---			
731C2: Nasset-----	0-8	8-14	63-73	18-24	1.25-1.30	0.6-2	0.21-0.23	3.0-5.9	2.0-3.0	.37	.37	4	6	48
	8-41	6-12	56-66	26-34	1.30-1.35	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	41-53	16-26	24-45	40-55	1.50-1.60	0.06-0.2	0.12-0.15	6.0-8.9	0.0-0.5	.32	.32			
	53-60	---	---	---	---	0.0-0.06	---	---	---	---	---			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
732B:														
Appleriver-----	0-14	0-10	63-80	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	14-34	0-10	55-80	20-35	1.30-1.50	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	34-58	5-20	30-60	37-50	1.40-1.60	0.06-0.2	0.08-0.17	3.0-5.9	0.0-0.5	.32	.32			
	58-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
732C:														
Appleriver-----	0-13	0-10	63-80	20-27	1.25-1.45	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	4	6	48
	13-34	0-10	55-80	20-35	1.30-1.50	0.6-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	34-58	5-20	30-60	35-50	1.40-1.60	0.0-0.2	0.08-0.17	3.0-5.9	0.0-0.5	.32	.32			
	58-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
735C2:														
Casco-----	0-6	20-40	50-60	10-20	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	6-15	18-50	20-45	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.0-0.5	.32	.32			
	15-60	90-100	0-8	0-2	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
Rodman-----	0-6	50-75	10-25	5-20	1.10-1.40	2-6	0.09-0.12	0.0-2.9	2.0-4.0	.05	.15	3	8	0
	6-10	25-60	30-50	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.28	.32			
	10-60	85-100	0-15	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Fox-----	0-4	5-30	50-80	15-25	1.30-1.50	0.6-2	0.17-0.24	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	4-7	5-30	50-80	15-25	1.35-1.55	0.6-2	0.16-0.23	0.0-2.9	0.2-1.0	.49	.49			
	7-22	5-30	50-77	18-35	1.50-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	22-39	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.28			
	39-60	90-98	0-10	0-2	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
735D2:														
Casco-----	0-6	20-40	50-60	10-20	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	6-15	25-50	20-45	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.0-0.5	.32	.32			
	15-60	90-100	0-8	0-2	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
Rodman-----	0-6	50-75	10-25	5-20	1.10-1.40	2-6	0.09-0.12	0.0-2.9	2.0-4.0	.05	.15	3	8	0
	6-10	18-60	30-50	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.28	.32			
	10-60	85-100	0-15	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Fox-----	0-4	5-30	50-80	15-25	1.30-1.50	0.6-2	0.17-0.24	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	4-7	5-30	50-80	15-25	1.35-1.55	0.6-2	0.16-0.23	0.0-2.9	0.2-1.0	.49	.49			
	7-22	5-30	50-77	18-35	1.50-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	22-39	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.28			
	39-60	90-98	0-10	0-2	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
735E2:														
Casco-----	0-5	20-40	50-60	10-20	1.35-1.55	0.6-2	0.19-0.24	0.0-2.9	1.0-3.0	.32	.32	3	5	56
	5-13	18-50	20-45	18-35	1.55-1.65	0.6-2	0.09-0.19	3.0-5.9	0.0-0.5	.32	.32			
	13-60	90-100	0-8	0-2	1.30-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
735E2:														
Rodman-----	0-6	50-75	10-25	5-20	1.10-1.40	2-6	0.09-0.12	0.0-2.9	2.0-4.0	.05	.15	3	8	0
	6-10	25-60	30-50	5-25	1.10-1.50	2-6	0.09-0.12	0.0-2.9	0.0-2.0	.28	.32			
	10-60	85-100	0-15	0-10	1.60-1.70	20-100	0.02-0.04	0.0-2.9	0.0-0.5	.02	.05			
Fox-----	0-7	5-30	50-80	15-25	1.30-1.50	0.6-2	0.17-0.24	0.0-2.9	1.0-3.0	.43	.43	4	5	56
	7-21	5-30	50-77	18-35	1.50-1.65	0.6-2	0.10-0.22	3.0-5.9	0.2-0.5	.32	.32			
	21-37	20-75	5-50	18-35	1.55-1.65	0.6-2	0.10-0.19	3.0-5.9	0.0-0.5	.28	.28			
	37-60	90-98	0-10	0-2	1.45-1.70	20-100	0.02-0.07	0.0-2.9	0.0-0.5	.02	.05			
745B:														
Shullsburg-----	0-11	5-26	45-75	22-35	1.40-1.50	0.6-2	0.20-0.24	0.0-2.9	4.0-7.0	.37	.37	4	6	48
	11-20	15-22	47-57	24-35	1.40-1.50	0.2-0.6	0.18-0.22	3.0-5.9	0.4-1.0	.37	.37			
	20-28	0-6	38-48	40-70	1.50-1.60	0.06-0.2	0.12-0.16	6.0-8.9	0.0-0.4	.32	.32			
	28-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
745C2:														
Shullsburg-----	0-8	5-26	45-75	22-35	1.40-1.50	0.6-2	0.20-0.24	0.0-2.9	2.0-5.0	.37	.37	4	6	48
	8-20	15-22	47-57	24-35	1.40-1.50	0.2-0.6	0.18-0.22	3.0-5.9	0.4-1.0	.37	.37			
	20-28	0-6	38-48	40-70	1.50-1.60	0.06-0.2	0.12-0.16	6.0-8.9	0.0-0.4	.32	.32			
	28-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
752C2:														
Oneco-----	0-6	20-28	48-56	20-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	3.0-4.0	.37	.37	4	6	48
	6-14	16-24	45-53	25-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.5-1.0	.37	.37			
	14-37	15-50	25-55	25-35	1.40-1.60	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			
	37-41	12-20	22-30	45-70	1.25-1.45	0.06-0.2	0.08-0.12	3.0-5.9	0.2-0.5	.28	.28			
	41-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
753B:														
Massbach-----	0-7	5-13	56-76	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.37	.37	4	6	48
	7-11	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.43	.43			
	11-39	3-10	53-73	25-35	1.30-1.60	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	39-46	3-10	35-60	35-50	1.60-1.70	0.06-0.2	0.11-0.18	3.0-5.9	0.1-0.5	.32	.32			
	46-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
753C2:														
Massbach-----	0-8	5-13	60-72	22-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.37	.37	4	6	48
	8-39	2-10	57-69	25-35	1.30-1.60	0.6-2	0.18-0.20	3.0-5.9	0.5-2.0	.37	.37			
	39-46	2-10	35-56	35-50	1.60-1.70	0.06-0.2	0.11-0.18	3.0-5.9	0.1-0.5	.32	.32			
	46-60	---	---	---	---	0.01-0.2	---	---	---	---	---			
802B:														
Orthents, loamy-----	0-6	30-45	25-48	22-30	1.70-1.75	0.2-0.6	0.18-0.22	3.0-5.9	0.5-2.0	.43	.43	5	6	48
	6-60	28-45	25-50	22-30	1.70-1.80	0.2-0.6	0.08-0.12	3.0-5.9	0.2-1.0	.43	.43			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
864. Pits, quarries														
865. Pits, gravel														
905F:														
NewGlarus-----	0-5	0-7	63-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.37	.37	4	5	56
	5-22	0-7	53-75	20-35	1.25-1.45	0.2-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	22-34	0-15	20-50	40-80	1.25-1.55	0.06-0.2	0.09-0.13	6.0-8.9	0.0-0.5	.37	.32			
	34-60	---	---	---	---	0.06-2	---	---	---	---	---			
Lamoille-----	0-6	0-7	66-85	15-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	3	5	56
	6-10	0-7	66-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	0.2-0.5	.49	.49			
	10-38	5-30	30-60	35-55	1.40-1.60	0.06-0.6	0.12-0.16	3.0-5.9	0.0-0.5	.15	.20			
	38-60	10-40	40-65	20-45	1.30-1.50	0.2-0.6	0.07-0.16	3.0-5.9	0.0-0.3	.43	.49			
928D2:														
NewGlarus-----	0-8	0-7	63-88	12-27	1.20-1.40	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.37	.37	4	5	56
	8-24	0-7	53-75	20-35	1.25-1.45	0.2-2	0.18-0.22	3.0-5.9	0.5-1.0	.37	.37			
	24-36	0-15	20-50	40-80	1.25-1.55	0.06-0.2	0.09-0.13	6.0-8.9	0.0-0.5	.37	.32			
	36-60	---	---	---	---	0.06-2	---	---	---	---	---			
Palsgrove-----	0-5	1-19	60-72	21-27	1.15-1.35	0.6-2	0.22-0.24	0.0-2.9	1.0-2.0	.43	.43	4	6	48
	5-44	1-20	55-70	25-35	1.40-1.60	0.6-2	0.18-0.20	3.0-5.9	0.3-1.0	.37	.37			
	44-49	10-20	20-65	35-75	1.20-1.40	0.06-0.2	0.08-0.10	6.0-8.9	0.0-0.3	.20	.20			
	49-60	---	---	---	---	0.06-0.6	---	---	---	---	---			
1107A:														
Sawmill-----	0-29	2-9	56-71	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	29-38	3-10	55-70	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	1.0-3.0	.32	.32			
	38-60	5-25	40-70	25-35	1.30-1.45	0.6-2	0.17-0.20	3.0-5.9	0.0-2.0	.32	.32			
3074A:														
Radford-----	0-12	0-15	58-82	18-27	1.40-1.60	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	6	48
	12-33	0-15	58-82	18-27	1.40-1.60	0.6-2	0.20-0.22	0.0-2.9	0.0-2.0	.49	.49			
	33-60	0-22	35-71	24-35	1.35-1.55	0.6-2	0.18-0.20	3.0-5.9	0.0-1.0	.32	.32			
3107A:														
Sawmill-----	0-26	2-9	59-71	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	4.0-5.0	.28	.28	5	6	48
	26-54	3-25	50-72	27-35	1.20-1.40	0.6-2	0.21-0.23	3.0-5.9	1.0-4.0	.32	.32			
	54-72	5-25	40-76	18-35	1.35-1.50	0.6-2	0.15-0.19	3.0-5.9	0.2-1.0	.32	.32			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
3451A:														
Lawson-----	0-14	0-15	58-90	10-27	1.20-1.55	0.6-2	0.22-0.24	0.0-2.9	2.0-4.0	.32	.32	5	5	56
	14-33	0-15	55-90	10-30	1.20-1.55	0.6-2	0.18-0.22	0.0-2.9	2.0-4.0	.32	.32			
	33-80	5-40	30-77	18-30	1.55-1.65	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.49	.49			
8070A:														
Beaucoup-----	0-15	0-15	55-70	27-35	1.15-1.35	0.2-0.6	0.15-0.20	3.0-5.9	5.0-6.0	.28	.28	5	6	48
	15-48	0-15	55-70	27-35	1.30-1.50	0.2-0.6	0.18-0.20	3.0-5.9	0.0-2.0	.32	.32			
	48-60	5-40	45-70	15-30	1.35-1.55	0.2-0.6	0.18-0.22	0.0-2.9	0.0-1.0	.32	.32			
	60-80	5-40	45-70	10-30	1.40-1.65	0.2-0.6	0.18-0.22	0.0-2.9	0.0-1.0	.32	.32			
8074A:														
Radford-----	0-21	3-15	58-79	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	3.5-5.0	.32	.32	5	6	48
	21-29	3-15	58-79	18-27	1.30-1.50	0.6-2	0.19-0.23	0.0-2.9	1.5-3.5	.49	.49			
	29-60	3-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.5-7.0	.28	.28			
8076A:														
Otter-----	0-30	0-15	58-82	18-27	1.10-1.25	0.6-2	0.22-0.24	0.0-2.9	3.0-10	.32	.32	5	6	48
	30-35	0-30	40-82	18-27	1.20-1.45	0.6-2	0.17-0.22	3.0-5.9	1.0-3.0	.49	.49			
	35-60	5-60	32-80	15-28	1.30-1.55	0.6-2	0.15-0.20	0.0-2.9	0.5-2.0	.49	.49			
8077A:														
Huntsville-----	0-27	0-15	58-82	18-27	1.15-1.35	0.6-2	0.22-0.24	3.0-5.9	3.0-4.0	.32	.32	5	6	48
	27-52	0-15	58-82	18-27	1.20-1.40	0.6-2	0.20-0.22	3.0-5.9	0.5-1.0	.32	.32			
	52-80	5-30	33-77	10-25	1.20-1.50	0.6-2	0.17-0.21	0.0-2.9	0.2-1.0	.49	.49			
8082A:														
Millington-----	0-26	5-30	50-75	20-27	1.35-1.55	0.6-2	0.20-0.24	0.0-2.9	4.0-6.0	.32	.32	5	4L	86
	26-36	10-40	30-70	20-35	1.40-1.60	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.32	.32			
	36-62	15-60	5-67	18-35	1.50-1.70	0.6-2	0.14-0.20	3.0-5.9	0.1-2.0	.28	.28			
8103A:														
Houghton-----	0-60	0-10	0-87	0-15	0.15-0.45	0.2-6	0.35-0.45	---	70-100	---	---	3	2	134
8107A:														
Sawmill-----	0-26	2-15	58-70	27-35	1.25-1.45	0.6-2	0.19-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
	26-53	5-20	45-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	2.0-7.0	.32	.32			
	53-60	5-21	44-68	27-35	1.30-1.50	0.6-2	0.17-0.20	3.0-5.9	1.0-3.0	.28	.28			
8210A:														
Lena-----	0-19	0-10	---	0-15	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---	3	2	134
	19-60	0-10	---	0-15	0.15-0.45	2-6	0.35-0.45	---	60-99	---	---			
8239A:														
Dorchester-----	0-6	10-40	50-70	11-30	1.20-1.30	0.6-2	0.20-0.22	0.0-2.9	0.5-2.0	.37	.37	5	4L	86
	6-60	10-40	30-80	18-30	1.25-1.40	0.6-2	0.22-0.24	3.0-5.9	1.0-4.0	.49	.49			

Table 20.--Physical Properties of the Soils--Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors			Wind erodi- bility group	Wind erodi- bility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct					
8415A:														
Orion-----	0-6	1-15	67-89	10-18	1.20-1.30	0.6-2	0.22-0.24	0.0-2.9	1.0-3.0	.43	.43	5	5	56
	6-25	2-15	67-88	10-18	1.20-1.30	0.6-2	0.20-0.22	0.0-2.9	1.0-3.0	.55	.55			
	25-60	2-15	55-88	5-30	1.25-1.45	0.6-2	0.18-0.22	0.0-2.9	3.0-8.0	.37	.37			
8451A:														
Lawson-----	0-14	0-15	50-80	10-27	1.20-1.55	0.6-2	0.22-0.24	0.0-2.9	3.0-7.0	.32	.32	5	5	56
	14-33	0-15	40-80	10-30	1.20-1.55	0.6-2	0.18-0.22	0.0-2.9	3.0-7.0	.32	.32			
	33-80	0-40	40-80	18-30	1.55-1.65	0.6-2	0.18-0.20	3.0-5.9	1.0-4.0	.49	.49			
8579A:														
Beavercreek-----	0-4	10-30	60-72	10-18	1.30-1.45	2-6	0.20-0.22	0.0-2.9	2.0-3.0	.32	.32	3	5	56
	4-18	10-40	40-80	5-18	1.40-1.50	2-6	0.14-0.18	0.0-2.9	0.5-1.0	.49	.55			
	18-60	30-90	5-50	5-18	1.40-1.50	2-6	0.04-0.08	0.0-2.9	0.0-0.5	.24	.32			

Table 21.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
21B:					
Pecatonica-----	0-3	10-22	---	5.1-7.3	0
	3-10	7.0-17	---	4.5-7.3	0
	10-18	11-16	---	4.5-7.3	0
	18-26	15-22	---	4.5-6.5	0
	26-68	15-22	---	4.5-6.5	0
	68-80	9.0-15	---	5.6-8.4	0-30
21C2:					
Pecatonica-----	0-7	10-22	---	5.1-7.3	0
	7-19	13-24	---	4.5-6.5	0
	19-60	15-22	---	4.5-6.5	0
22C2:					
Westville-----	0-9	13-22	---	5.1-6.5	0
	9-54	15-23	---	5.1-7.3	0
	54-60	9.0-14	---	6.6-8.4	0-30
22C3:					
Westville-----	0-3	16-23	---	5.1-7.3	0
	3-39	15-23	---	5.1-7.3	0
	39-60	9.0-14	---	6.6-8.4	0-30
22D2:					
Westville-----	0-9	13-22	---	5.1-6.5	0
	9-54	15-23	---	5.1-7.3	0
	54-60	9.0-14	---	6.6-8.4	0-30
29C2:					
Dubuque-----	0-5	15-20	---	5.1-7.3	0
	5-26	15-20	---	5.1-6.0	0
	26-31	41-45	---	5.1-6.0	0
	31-60	---	---	---	---
29D2:					
Dubuque-----	0-6	15-20	---	5.1-7.3	0
	6-27	15-20	---	5.1-6.0	0
	27-32	41-45	---	5.1-6.0	0
	32-60	---	---	---	---
40C2:					
Dodgeville-----	0-5	15-20	---	6.1-7.3	0
	5-24	16-23	---	5.1-6.5	0
	24-33	30-32	---	5.1-7.3	0
	33-60	---	---	---	---
40D2:					
Dodgeville-----	0-4	15-20	---	6.1-7.3	0
	4-24	16-23	---	5.1-6.5	0
	24-33	30-32	---	5.1-7.3	0
	33-60	---	---	---	---
51A:					
Muscatune-----	0-16	16-32	---	6.1-7.3	0
	16-22	16-27	---	5.6-7.3	0
	22-46	17-31	---	5.6-7.3	0
	46-60	9.0-22	---	6.6-7.8	0-15

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
51B:					
Muscataune-----	0-14	16-32	---	5.1-7.3	0
	14-42	16-27	---	5.1-7.3	0
	42-60	10-31	---	6.6-7.8	0-15
61A:					
Atterberry-----	0-9	11-28	---	6.1-7.3	0
	9-17	9.0-24	---	5.6-6.5	0
	17-48	16-29	---	5.1-6.0	0
	48-60	9.0-23	---	5.6-7.8	0-8
61B:					
Atterberry-----	0-9	11-28	---	6.1-7.3	0
	9-13	9.0-24	---	5.6-6.5	0
	13-48	16-29	---	5.1-6.0	0
	48-60	9.0-23	---	5.6-7.8	0-8
67A:					
Harpster-----	0-18	26-33	---	7.4-8.4	10-40
	18-32	17-23	---	7.4-8.4	5-40
	32-60	13-22	---	7.4-8.4	5-40
68A:					
Sable-----	0-17	26-33	---	5.6-7.3	0
	17-23	20-30	---	5.6-7.3	0
	23-60	15-23	---	5.6-7.8	0-10
86A:					
Oscos-----	0-13	18-25	---	5.1-7.3	0
	13-38	15-23	---	5.1-6.5	0
	38-60	12-18	---	5.6-7.3	0-15
86B:					
Oscos-----	0-14	18-25	---	5.1-7.3	0
	14-55	15-24	11-18	5.1-6.5	0
	55-60	12-18	---	5.6-7.8	0-15
86C:					
Oscos-----	0-14	18-25	---	5.1-7.3	0
	14-43	15-23	---	5.1-6.5	0
	43-60	12-18	---	5.6-7.3	0-15
86C2:					
Oscos-----	0-9	18-25	---	5.1-7.3	0
	9-34	15-23	---	5.1-6.5	0
	34-60	12-18	---	5.1-7.8	0-15
87B:					
Dickinson-----	0-9	10-20	---	5.6-7.3	0
	9-17	7.0-17	---	5.6-7.3	0
	17-33	9.0-17	---	5.1-6.5	0
	33-41	0.0-10	---	5.1-6.5	0
	41-60	0.0-10	---	5.6-6.5	0
87C2:					
Dickinson-----	0-9	15-20	---	5.6-7.3	0
	9-29	15-20	---	5.1-6.5	0
	29-35	5.0-10	---	5.1-6.5	0
	35-60	5.0-10	---	5.6-6.5	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
104A:					
Virgil-----	0-7	13-24	---	6.1-7.8	0
	7-13	13-24	---	6.1-7.8	0
	13-49	9.0-17	---	5.1-7.3	0
	49-58	16-23	---	5.1-7.8	0
	58-60	9.0-20	---	5.6-8.4	0-20
104B:					
Virgil-----	0-6	13-24	---	6.1-7.8	0
	6-12	13-24	---	6.1-7.8	0
	12-49	9.0-17	---	5.1-7.3	0
	49-58	16-23	---	5.1-7.8	0
	58-60	9.0-20	---	5.6-8.4	0-20
105A:					
Batavia-----	0-9	16-22	---	5.6-7.3	0
	9-41	12-23	---	5.1-6.5	0
	41-60	9.0-19	---	5.6-7.3	0
105B:					
Batavia-----	0-9	16-22	---	5.6-7.3	0
	9-12	10-18	---	5.6-7.3	0
	12-45	12-23	---	5.1-6.5	0
	45-60	9.0-19	---	5.6-7.3	0
105C:					
Batavia-----	0-7	16-22	---	5.6-7.3	0
	7-45	12-23	---	5.1-6.5	0
	45-60	9.0-19	---	5.6-7.3	0
119C2:					
Elco-----	0-8	14-22	---	5.6-7.3	0
	8-31	14-22	---	5.1-7.8	0
	31-60	15-27	---	5.1-7.8	0
134B:					
Camden-----	0-9	10-20	---	5.1-7.3	0
	9-15	10-20	---	5.1-7.3	0
	15-34	13-22	---	5.1-7.3	0
	34-40	10-19	---	5.1-7.3	0
	40-60	3.0-12	---	5.1-8.4	0-25
134C2:					
Camden-----	0-7	12-22	---	5.1-7.3	0
	7-34	19-27	---	5.1-7.3	0
	34-43	15-23	---	5.1-7.3	0
	43-80	4.1-12	---	6.1-7.8	0-25
134C3:					
Camden-----	0-7	7.0-17	---	5.1-7.3	0
	7-34	15-29	---	5.1-7.3	0
	34-43	9.0-20	---	5.1-7.3	0
	43-80	2.0-10	---	6.1-7.8	0-25
134D2:					
Camden-----	0-7	12-22	---	5.1-7.3	0
	7-34	15-29	---	5.1-7.3	0
	34-43	9.0-20	---	5.1-7.3	0
	43-80	2.0-10	---	6.1-7.8	0-25

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
148A:					
Proctor-----	0-11	16-24	---	5.1-7.8	0
	11-27	16-25	---	5.6-7.3	0
	27-44	11-23	---	5.6-7.3	0
	44-73	3.0-16	---	6.1-7.8	0-10
148B:					
Proctor-----	0-11	17-24	---	5.1-7.8	0
	11-28	16-25	---	5.6-7.3	0
	28-33	11-21	---	5.6-7.3	0
	33-60	3.0-13	---	5.6-7.8	0-10
148C2:					
Proctor-----	0-8	15-23	---	5.1-7.8	0
	8-32	16-25	---	5.6-7.3	0
	32-48	15-23	---	5.6-7.3	0
	48-60	4.0-12	---	6.1-7.8	0-10
152A:					
Drummer-----	0-14	26-53	---	5.6-7.3	0
	14-41	12-23	---	5.6-7.8	0
	41-47	13-21	---	6.1-8.4	0-20
	47-60	9.0-19	---	6.6-8.4	0-40
198A:					
Elburn-----	0-13	20-30	---	5.6-7.3	0
	13-52	15-25	---	5.6-7.3	0
	52-60	9.0-15	---	6.1-8.4	0-20
198B:					
Elburn-----	0-11	20-30	---	5.6-7.8	0
	11-44	15-25	---	5.6-7.8	0
	44-60	9.0-15	---	6.1-8.4	0-20
199A:					
Plano-----	0-14	16-23	---	6.1-7.3	0
	14-49	16-27	---	5.1-7.3	0
	49-60	7.8-17	---	5.6-7.8	0
	60-80	2.6-11	---	5.6-8.4	0-20
199B:					
Plano-----	0-15	16-23	---	6.1-7.3	0
	15-45	16-27	---	5.1-7.3	0
	45-55	7.8-17	---	5.6-7.8	0
	55-80	2.6-11	---	5.6-8.4	0-20
199C2:					
Plano-----	0-8	16-23	---	6.1-7.3	0
	8-41	16-27	---	5.1-7.3	0
	41-53	7.8-17	---	5.6-7.8	0
	53-80	2.6-11	---	5.6-8.4	0-20
206A:					
Thorp-----	0-14	20-28	---	5.1-7.8	0
	14-19	11-17	---	5.1-7.3	0
	19-43	13-22	---	5.1-7.3	0
	43-50	12-19	---	5.6-7.8	0-5
	50-65	3.0-13	---	6.1-8.4	0-20

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
219A:					
Millbrook-----	0-14	15-24	---	5.1-7.8	0
	14-35	16-23	---	5.1-7.3	0
	35-44	11-22	---	5.1-7.3	0
	44-60	6.0-15	---	5.6-8.4	0-20
227B:					
Argyle-----	0-7	18-24	---	5.1-6.5	0
	7-13	10-18	---	5.1-6.5	0
	13-25	16-23	---	5.1-6.0	0
	25-70	12-22	---	5.1-6.5	0
	70-84	9.0-19	---	5.1-6.5	0
227C2:					
Argyle-----	0-7	18-24	---	5.1-6.5	0
	7-22	16-23	---	5.1-6.0	0
	22-38	12-22	---	5.1-6.5	0
	38-70	12-22	---	5.1-6.5	0
	70-84	9.0-19	---	5.1-6.5	0
233B:					
Birkbeck-----	0-10	13-24	---	5.6-7.3	0
	10-57	16-29	---	5.6-7.3	0
	57-60	9.0-19	---	6.1-7.8	0-5
233C2:					
Birkbeck-----	0-7	13-24	---	5.6-7.3	0
	7-46	15-22	13-18	4.5-7.3	0
	46-57	9.0-19	---	6.1-7.8	0-5
	57-60	4.0-16	---	7.4-8.4	15-40
233D2:					
Birkbeck-----	0-6	13-24	---	5.6-7.3	0
	6-43	15-22	---	4.5-7.3	0
	43-60	9.0-19	---	6.1-7.8	0-5
242A:					
Kendall-----	0-7	10-26	---	5.1-7.3	0
	7-11	8.0-20	---	5.1-7.3	0
	11-51	13-18	13-17	4.5-7.3	0
	51-58	9.0-19	---	5.1-7.8	0-15
	58-80	3.0-10	---	7.4-8.4	0-20
242B:					
Kendall-----	0-12	10-26	---	5.1-7.3	0
	12-50	13-18	---	4.5-7.3	0
	50-60	9.0-19	---	5.1-7.8	0-15
243A:					
St. Charles-----	0-9	14-22	---	5.1-7.8	0
	9-51	15-22	---	4.5-7.3	0
	51-60	9.0-19	---	5.1-7.3	0
243B:					
St. Charles-----	0-8	14-22	---	5.1-7.8	0
	8-50	15-22	---	4.5-7.3	0
	50-60	9.0-19	---	5.1-7.3	0
243C2:					
St. Charles-----	0-8	14-22	---	5.1-7.8	0
	8-41	15-22	---	4.5-7.3	0
	41-60	9.0-19	---	5.1-7.3	0

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
259C2:					
Assumption-----	0-8	18-24	---	5.6-7.3	0
	8-24	15-23	---	5.1-7.3	0
	24-60	15-22	---	5.1-7.3	0
272A:					
Edgington-----	0-20	18-34	---	5.1-6.5	0
	20-31	---	7.6-14	5.1-6.0	0
	31-55	17-31	---	5.1-6.0	0
	55-60	9.0-22	---	6.1-7.8	0-15
278A:					
Stronghurst-----	0-8	14-22	---	5.1-7.3	0
	8-47	17-23	---	5.1-7.3	0
	47-60	12-17	---	5.6-7.8	0-15
279A:					
Rozetta-----	0-4	10-22	---	5.1-7.3	0
	4-11	7.0-17	---	4.5-7.3	0
	11-50	16-22	16-22	4.5-6.0	0
	50-60	12-17	---	5.6-7.8	0-15
279B:					
Rozetta-----	0-7	10-22	---	5.1-7.3	0
	7-11	7.0-17	---	4.5-7.3	0
	11-55	16-22	---	4.5-6.0	0
	55-60	12-17	---	5.6-7.8	0-15
280B:					
Fayette-----	0-9	15-20	---	5.1-7.3	0
	9-39	15-23	---	4.5-6.0	0
	39-60	15-20	---	5.1-7.8	0-15
280C2:					
Fayette-----	0-8	18-25	---	5.1-7.3	0
	8-64	15-22	---	4.5-6.0	0
	64-80	15-20	---	5.1-7.8	0-15
280C3:					
Fayette-----	0-8	25-30	---	5.1-7.3	0
	8-48	15-22	---	4.5-6.0	0
	48-60	15-20	---	5.1-7.8	0-15
280D2:					
Fayette-----	0-6	18-25	---	5.1-7.3	0
	6-48	15-22	---	4.5-6.0	0
	48-60	15-20	---	5.1-7.8	0-15
290C2:					
Warsaw-----	0-9	17-26	---	6.1-7.8	0
	9-22	9.0-19	---	5.6-6.5	0
	22-25	11-24	---	6.1-7.3	0-5
	25-60	0.0-2.0	---	7.4-8.4	15-25
344A:					
Harvard-----	0-16	16-24	---	5.1-7.8	0
	16-26	15-23	---	5.1-7.3	0
	26-42	9.0-22	---	5.6-7.8	0-5
	42-60	3.0-19	---	5.1-8.4	0-20

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
344B:					
Harvard-----	0-9	16-24	---	5.1-7.8	0
	9-30	15-23	---	5.1-7.3	0
	30-56	9.0-22	---	5.6-7.8	0-5
	56-69	3.0-19	---	5.1-8.4	0-20
344C2:					
Harvard-----	0-7	16-22	---	5.1-7.8	0
	7-32	15-23	---	5.1-7.3	0
	32-40	9.0-22	---	5.6-7.8	0-5
	40-60	3.0-19	---	5.1-8.4	0-20
361D3:					
Kidder-----	0-6	10-17	---	6.1-7.8	0
	6-26	10-17	---	5.6-7.8	0
	26-60	3.0-9.0	---	7.4-8.4	10-30
361E2:					
Kidder-----	0-8	7.0-17	---	6.1-7.8	0
	8-29	10-17	---	5.6-7.8	0
	29-60	3.0-9.0	---	7.4-8.4	10-30
363D2:					
Griswold-----	0-8	13-23	---	5.6-7.8	0
	8-23	12-21	---	5.6-7.8	0
	23-27	6.0-13	---	6.6-7.8	0-10
	27-60	3.0-10	---	7.4-8.4	10-40
403D2:					
Elizabeth-----	0-7	15-26	---	6.1-8.4	0-5
	7-60	---	---	---	---
403F2:					
Elizabeth-----	0-10	15-26	---	6.1-8.4	0-5
	10-60	---	---	---	0
410B:					
Woodbine-----	0-4	13-20	---	5.1-7.3	0
	4-9	7.0-17	---	4.5-7.3	0
	9-15	15-20	---	4.5-6.0	0
	15-37	16-22	---	5.1-6.5	0
	37-41	27-38	---	5.6-6.5	0
	41-60	---	---	---	---
410C2:					
Woodbine-----	0-8	13-20	---	5.1-7.3	0
	8-18	15-20	---	4.5-6.0	0
	18-43	16-22	---	5.1-6.5	0
	43-48	27-38	---	5.6-6.5	0
	48-60	---	---	---	---
410C3:					
Woodbine-----	0-5	13-19	---	4.5-6.0	0
	5-30	16-22	---	5.1-6.5	0
	30-41	27-38	---	5.6-6.5	0
	41-60	---	---	---	---

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
410D2: Woodbine-----	0-7	13-20	---	5.1-7.3	0
	7-24	16-23	---	5.1-6.5	0
	24-41	16-22	---	5.1-6.5	0
	41-46	27-38	---	5.6-6.5	0
	46-80	---	---	---	---
411B: Ashdale-----	0-15	18-26	---	6.1-7.3	0
	15-43	16-23	---	5.6-6.0	0
	43-51	16-23	---	5.6-7.3	0
	51-60	---	---	---	---
411C2: Ashdale-----	0-9	17-23	---	6.1-7.3	0
	9-48	16-23	---	5.6-6.0	0
	48-56	16-23	---	5.6-7.3	0
	56-60	---	---	---	---
412B: Ogle-----	0-11	18-26	---	5.1-6.5	0
	11-33	16-23	---	5.1-6.0	0
	33-80	12-18	---	5.6-6.0	0
412C2: Ogle-----	0-9	17-23	---	5.1-6.5	0
	9-41	16-23	---	5.1-6.0	0
	41-60	12-18	---	5.6-6.0	0
414B: Myrtle-----	0-8	14-22	---	5.1-7.3	0
	8-14	14-22	---	5.1-7.3	0
	14-42	16-23	---	4.5-6.0	0
	42-60	12-18	---	5.6-6.0	0
414C: Myrtle-----	0-8	14-22	---	5.1-7.3	0
	8-42	16-23	---	4.5-6.0	0
	42-60	12-18	---	5.6-6.0	0
414C2: Myrtle-----	0-7	14-22	---	5.1-7.3	0
	7-42	16-23	---	4.5-6.0	0
	42-60	12-18	---	5.6-6.0	0
416B: Durand-----	0-13	18-26	---	5.1-6.5	0
	13-20	15-23	---	5.1-6.5	0
	20-26	11-21	---	5.1-6.5	0
	26-60	11-21	---	5.1-6.5	0-20
416C2: Durand-----	0-9	18-26	---	5.1-6.5	0
	9-22	15-23	---	5.1-6.5	0
	22-60	11-21	---	5.1-6.5	0
417C2: Derinda-----	0-7	15-22	---	5.6-6.5	0
	7-18	22-26	---	5.6-7.3	0
	18-25	24-26	---	6.1-7.8	0
	25-60	---	---	---	---

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
417C3: Derinda-----	0-3	12-15	---	5.6-6.5	0
	3-18	22-26	---	5.6-7.3	0
	18-25	24-26	---	6.1-7.8	0
	25-60	---	---	---	---
417D2: Derinda-----	0-5	15-22	---	5.6-6.5	0
	5-18	22-26	---	5.6-7.3	0
	18-25	24-26	---	6.1-7.8	0
	25-60	---	---	---	---
418C2: Schapville-----	0-8	18-26	---	5.6-6.5	0
	8-26	17-28	---	5.6-7.3	0
	26-34	21-28	---	5.6-7.8	0
	34-60	---	---	---	---
419B: Flagg-----	0-4	14-22	---	4.5-7.3	0
	4-11	14-22	---	4.5-7.3	0
	11-48	16-20	---	4.5-6.0	0
	48-72	13-18	---	5.1-7.3	0
419C2: Flagg-----	0-7	14-22	---	4.5-7.3	0
	7-33	16-22	---	4.5-6.0	0
	33-60	13-18	---	5.1-7.3	0
429B: Palsgrove-----	0-10	17-22	---	5.6-7.3	0
	10-48	16-23	---	5.1-7.3	0
	48-59	21-40	---	5.6-7.3	0
	59-60	---	---	---	---
429C2: Palsgrove-----	0-7	17-22	---	5.6-7.3	0
	7-42	16-23	---	5.1-7.3	0
	42-52	21-40	---	5.6-7.3	0
	52-60	---	---	---	---
429D2: Palsgrove-----	0-5	17-22	---	5.6-7.3	0
	5-44	16-23	---	5.1-7.3	0
	44-49	21-40	---	5.6-7.3	0
	49-60	---	---	---	---
506B: Hitt-----	0-15	19-26	---	5.1-6.5	0
	15-19	16-23	---	5.1-6.0	0
	19-37	16-21	---	5.1-6.0	0
	37-42	30-35	---	5.6-7.3	0
	42-60	---	---	---	---
506C2: Hitt-----	0-15	19-26	---	5.1-6.5	0
	15-19	16-23	---	5.1-6.0	0
	19-37	16-21	---	5.1-6.0	0
	37-42	30-35	---	5.6-7.3	0
	42-60	---	---	---	---

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
546B:					
Keltner-----	0-14	18-24	---	5.6-7.3	0
	14-38	16-23	---	5.6-7.3	0
	38-40	13-20	---	6.6-8.4	0
	40-60	---	---	---	---
546C2:					
Keltner-----	0-9	17-23	---	5.6-7.3	0
	9-34	16-23	---	5.6-7.3	0
	34-43	13-20	---	6.6-8.4	0
	43-60	---	---	---	---
547B:					
Eleroy-----	0-9	18-23	---	5.6-7.3	0
	9-38	17-23	---	5.6-7.3	0
	38-42	18-27	---	7.4-8.4	0
	42-60	---	---	---	---
547C2:					
Eleroy-----	0-11	18-22	---	5.6-7.3	0
	11-46	17-23	---	5.6-7.3	0
	46-52	18-27	---	7.4-8.4	0
	52-60	---	---	---	---
572B:					
Loran-----	0-12	20-36	---	6.1-7.3	0
	12-43	14-25	---	6.1-7.8	0-5
	43-51	18-27	---	6.6-8.4	0-15
	51-60	---	---	---	---
572C:					
Loran-----	0-13	20-36	---	6.1-7.3	0
	13-38	14-25	---	6.1-7.3	0-5
	38-40	18-27	---	6.6-8.4	0-15
	40-60	---	---	---	---
618C2:					
Senachwine-----	0-6	7.0-17	---	5.6-7.3	0
	6-27	9.0-20	---	5.1-7.3	0
	27-32	4.0-9.0	---	6.6-7.8	0-20
	32-60	2.0-7.0	---	7.4-8.4	20-45
618C3:					
Senachwine-----	0-7	11-25	---	5.6-7.3	0
	7-24	4.0-9.0	---	6.6-7.8	0-20
	24-60	2.0-7.0	---	7.4-8.4	20-45
618D2:					
Senachwine-----	0-6	7.0-17	---	5.6-7.3	0
	6-28	9.0-20	---	5.1-7.3	0
	28-34	4.0-9.0	---	6.6-7.8	0-20
	34-60	2.0-7.0	---	7.4-8.4	20-45
622B:					
Wyanet-----	0-12	8.0-22	---	5.6-7.3	0
	12-26	17-31	---	5.6-7.3	0
	26-38	8.0-21	---	5.6-7.3	0
	38-60	4.0-13	---	7.4-8.4	5-35

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
622C2: Wyanet-----	0-8	6.5-12	---	5.6-7.3	0
	8-34	8.0-21	---	5.6-7.3	0
	34-60	4.0-13	---	7.4-8.4	5-35
656C2: Octagon-----	0-7	11-20	---	5.6-7.3	0
	7-32	12-19	---	5.6-7.3	0
	32-60	5.0-11	---	7.4-8.4	10-35
656D2: Octagon-----	0-7	11-20	---	5.6-7.3	0
	7-28	12-19	---	5.6-7.3	0
	28-60	5.0-11	---	7.4-8.4	10-35
675A: Greenbush-----	0-9	13-21	---	5.1-7.3	0
	9-16	12-22	---	5.1-7.3	0
	16-46	20-27	13-18	4.5-7.3	0
	46-60	13-21	---	5.6-7.3	0
675B: Greenbush-----	0-6	16-21	---	5.1-7.3	0
	6-17	12-22	---	5.1-7.3	0
	17-75	20-28	13-18	4.5-7.3	0
	75-80	13-21	---	5.6-7.3	0
675C: Greenbush-----	0-6	20-25	---	5.1-7.3	0
	6-46	25-30	---	4.5-7.3	0
	46-60	20-25	---	5.6-7.3	0
675C2: Greenbush-----	0-6	15-21	---	5.1-7.3	0
	6-46	21-27	14-18	4.5-7.3	0
	46-60	13-21	---	5.6-7.3	0
686B: Parkway-----	0-16	17-24	---	5.1-7.3	0
	16-49	16-23	---	5.1-7.3	0
	49-60	12-19	---	6.1-8.4	0-20
686C2: Parkway-----	0-9	16-23	---	5.1-7.3	0
	9-40	16-23	---	5.1-7.3	0
	40-60	12-19	---	6.1-8.4	0-20
731B: Nasset-----	0-7	20-25	---	5.1-7.3	0
	7-11	7.0-17	---	4.5-7.3	0
	11-41	25-30	---	5.1-6.5	0
	41-53	41-45	---	6.6-7.3	0
	53-60	---	---	---	---
731C2: Nasset-----	0-8	20-25	---	5.1-7.3	0
	8-41	25-30	---	5.1-6.5	0
	41-53	41-45	---	6.6-7.3	0
	53-60	---	---	---	---

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
732B:					
Appleriver-----	0-14	15-22	---	5.6-7.3	0
	14-34	14-23	---	5.1-6.0	0
	34-58	14-21	---	5.1-7.8	0-20
	58-60	---	---	---	---
732C:					
Appleriver-----	0-13	15-22	---	5.6-7.3	0
	13-34	14-23	---	5.1-6.0	0
	34-58	14-21	---	5.1-7.8	0-20
	58-60	---	---	---	---
735C2:					
Casco-----	0-6	4.0-20	---	5.6-7.3	0
	6-15	4.0-30	---	5.6-7.8	0-3
	15-60	0.0-3.0	---	7.4-8.4	1-25
Rodman-----	0-6	5.0-16	---	6.6-7.8	0-15
	6-10	1.0-14	---	6.6-7.8	0-25
	10-60	1.0-6.0	---	7.4-8.4	10-45
Fox-----	0-4	11-21	---	5.1-7.3	0
	4-7	9.0-17	---	5.1-7.3	0
	7-22	11-22	---	5.1-7.3	0
	22-39	10-22	---	5.6-7.8	0-30
	39-60	0.0-3.0	---	7.4-8.4	5-45
735D2:					
Casco-----	0-6	4.0-20	---	5.6-7.3	0
	6-15	4.0-30	---	5.6-7.8	0-3
	15-60	0.0-3.0	---	7.4-8.4	1-25
Rodman-----	0-6	5.0-16	---	6.6-7.8	0-15
	6-10	1.0-14	---	6.6-7.8	0-25
	10-60	1.0-6.0	---	7.4-8.4	10-45
Fox-----	0-4	11-21	---	5.1-7.3	0
	4-7	9.0-17	---	5.1-7.3	0
	7-22	11-22	---	5.1-7.3	0
	22-39	10-22	---	5.6-7.8	0-30
	39-60	0.0-3.0	---	7.4-8.4	5-45
735E2:					
Casco-----	0-5	4.0-20	---	5.6-7.3	0
	5-13	4.0-30	---	5.6-7.8	0-3
	13-60	0.0-3.0	---	7.4-8.4	1-25
Rodman-----	0-6	5.0-16	---	6.6-7.8	0-15
	6-10	1.0-14	---	6.6-7.8	0-25
	10-60	1.0-6.0	---	7.4-8.4	10-45
Fox-----	0-7	11-21	---	5.1-7.3	0
	7-21	11-22	---	5.1-7.3	0
	21-37	10-22	---	5.6-7.8	0-30
	37-60	0.0-3.0	---	7.4-8.4	5-45
745B:					
Shullsburg-----	0-11	19-30	---	5.6-7.3	0
	11-20	19-28	---	5.6-7.3	0
	20-28	26-44	---	6.1-7.8	0-10
	28-60	---	---	---	---

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
745C2: Shullsburg-----	0-8	19-29	---	5.6-7.3	0
	8-20	19-28	---	5.6-7.3	0
	20-28	26-44	---	6.1-7.8	0-10
	28-60	---	---	---	---
752C2: Oneco-----	0-6	18-24	---	5.6-7.3	0
	6-14	17-23	---	5.1-6.5	0
	14-37	15-23	---	5.1-6.5	0
	37-41	27-35	---	5.6-7.3	0
	41-60	---	---	---	---
753B: Massbach-----	0-7	17-24	---	5.6-7.3	0
	7-11	7.0-17	---	4.5-7.3	0
	11-39	16-23	---	5.6-7.8	0
	39-46	18-27	---	6.1-7.8	0
	46-60	---	---	---	---
753C2: Massbach-----	0-8	17-23	---	5.6-7.3	0
	8-39	16-23	---	5.6-7.8	0
	39-46	18-27	---	6.1-7.8	0
	46-60	---	---	---	---
802B: Orthents, loamy-----	0-6	12-16	---	5.6-7.8	0-10
	6-60	12-16	---	5.6-7.8	0-20
864. Pits, quarries					
865. Pits, gravel					
905F: NewGlarus-----	0-5	10-23	---	6.1-7.3	0
	5-22	16-27	---	5.6-7.3	0
	22-34	26-56	---	5.6-7.3	0
	34-60	---	---	---	---
Lamoille-----	0-6	10-22	---	5.1-7.3	0
	6-10	7.0-17	---	4.5-7.3	0
	10-38	36-46	---	5.1-7.8	0
	38-60	21-27	---	5.6-7.3	0
928D2: NewGlarus-----	0-8	10-22	---	6.1-7.3	0
	8-24	16-27	---	5.6-7.3	0
	24-36	26-56	---	5.6-7.3	0
	36-60	---	---	---	---
Palsgrove-----	0-5	15-20	---	5.6-7.3	0
	5-44	16-23	---	5.1-7.3	0
	44-49	21-40	---	5.6-7.3	0
	49-60	---	---	---	---

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
1107A:					
Sawmill-----	0-29	24-31	---	6.1-7.8	0
	29-38	17-27	---	6.1-7.8	0
	38-60	16-25	---	6.1-7.8	0-10
3074A:					
Radford-----	0-12	15-24	---	5.6-7.8	0
	12-33	11-20	---	6.1-7.8	0
	33-60	14-23	---	6.1-7.8	0-20
3107A:					
Sawmill-----	0-26	24-31	---	6.1-7.8	0
	26-54	18-29	---	6.1-7.8	0
	54-72	11-23	---	6.1-8.4	0-30
3451A:					
Lawson-----	0-14	9.1-23	---	6.1-7.8	0
	14-33	9.1-25	---	6.1-7.8	0
	33-80	13-24	---	6.1-7.8	0
8070A:					
Beaucoup-----	0-15	26-33	---	5.6-7.8	0
	15-48	16-25	---	5.6-7.8	0
	48-60	9.0-20	---	6.1-7.8	0-5
	60-80	6.0-20	---	6.1-8.4	0-25
8074A:					
Radford-----	0-21	14-30	---	5.6-6.5	0
	21-29	10-26	---	6.1-7.3	0
	29-60	23-36	---	6.1-7.3	0
8076A:					
Otter-----	0-30	16-36	---	6.1-7.8	0
	30-35	12-22	---	6.1-7.8	0
	35-60	10-21	---	6.1-8.4	0
8077A:					
Huntsville-----	0-27	17-24	---	5.6-7.8	0
	27-52	11-17	---	5.6-7.8	0
	52-80	6.0-17	---	5.6-7.8	0-5
8082A:					
Millington-----	0-26	20-28	---	7.4-8.4	5-20
	26-36	14-27	---	7.4-8.4	5-30
	36-62	11-25	---	7.4-8.4	10-30
8103A:					
Houghton-----	0-60	140-180	---	5.6-7.8	0
8107A:					
Sawmill-----	0-26	23-36	---	6.1-7.8	0
	26-53	18-34	---	6.1-7.8	0-5
	53-60	18-34	---	6.1-8.4	0-30
8210A:					
Lena-----	0-19	50-150	---	7.4-8.4	5-20
	19-60	50-150	---	7.4-8.4	5-20
8239A:					
Dorchester-----	0-6	15-20	---	7.4-8.4	5-30
	6-60	15-20	---	6.6-8.4	0-15

Table 21.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Depth	Cation- exchange capacity	Effective cation- exchange capacity	Soil reaction	Calcium carbon- ate
	In	meq/100 g	meq/100 g	pH	Pct
8415A: Orion-----	0-6	7.0-20	---	5.6-7.8	0
	6-25	7.0-20	---	5.6-7.8	0
	25-60	10-35	---	5.6-7.8	0
8451A: Lawson-----	0-14	11-28	---	6.1-7.8	0
	14-33	11-29	---	6.1-7.8	0
	33-80	11-23	---	6.1-7.8	0
8579A: Beavercreek-----	0-4	5.5-9.8	---	6.1-7.8	0
	4-18	2.7-9.7	---	6.1-7.8	0
	18-60	2.6-9.6	---	6.6-8.4	0-5

Table 22.--Water Features

(See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
21B: Pecatonica-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
21C2: Pecatonica-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
22C2: Westville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
22C3: Westville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
22D2: Westville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
29C2: Dubuque-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
29D2: Dubuque-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
40C2: Dodgeville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
40D2: Dodgeville-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
51A: Muscatune-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
51B: Muscatune-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
61A: Atterberry-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
61B: Atterberry-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
67A: Harpster-----	B	0.0-0.5	Brief	Occasional	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
68A: Sable-----	B/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
86A: Osco-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
86B:										
Oscosco-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	None	---	None	May-Dec	>6.0	>6.0	---
86C:										
Oscosco-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
86C2:										
Oscosco-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
87B:										
Dickinson-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
87C2:										
Dickinson-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
104A:										
Virgil-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
104B:										
Virgil-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
105A:										
Batavia-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
105B:										
Batavia-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
105C:										
Batavia-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
119C2:										
Elco-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.8-4.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
134B:										
Camden-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
134C2:										
Camden-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
134C3:										
Camden-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
134D2:										
Camden-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
148A:										
Proctor-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
148B:										
Proctor-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
148C2: Proctor-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
152A: Drummer-----	B/D	0.0-0.5	Brief	Occasional	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
198A: Elburn-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
198B: Elburn-----	B	---	---	None	---	None	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
199A: Plano-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
199B: Plano-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
199C2: Plano-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
206A: Thorp-----	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
219A: Millbrook-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
227B: Argyle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
227C2: Argyle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
233B: Birkbeck-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
233C2: Birkbeck-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
233D2: Birkbeck-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
242A: Kendall-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
242B: Kendall-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
243A: St. Charles-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
243B: St. Charles-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
243C2: St. Charles-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
259C2: Assumption-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	2.8-4.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
272A: Edgington-----	C/D	0.0-0.5	Brief	Frequent	---	None	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
278A: Stronghurst-----	B	---	---	None	---	None	Jan-May	0.5-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
279A: Rozetta-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
279B: Rozetta-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
280B: Fayette-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
280C2: Fayette-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
280C3: Fayette-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
280D2: Fayette-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
290C2: Warsaw-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
344A: Harvard-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
344B: Harvard-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
344C2: Harvard-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
361D3: Kidder-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
361E2: Kidder-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
363D2: Griswold-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
403D2: Elizabeth-----	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
403F2: Elizabeth-----	D	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
410B: Woodbine-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
410C2: Woodbine-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
410C3: Woodbine-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
410D2: Woodbine-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
411B: Ashdale-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
411C2: Ashdale-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
412B: Ogle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
412C2: Ogle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
414B: Myrtle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
414C: Myrtle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
414C2: Myrtle-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
416B: Durand-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
416C2: Durand-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
417C2: Derinda-----	C	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.0	2.5-3.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
417C3: Derinda-----	C	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.0	2.5-3.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
417D2: Derinda-----	C	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.0	2.5-3.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
418C2: Schapville-----	C	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
419B: Flagg-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
419C2: Flagg-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
429B: Palsgrove-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
429C2: Palsgrove-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
429D2: Palsgrove-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
506B: Hitt-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
506C2: Hitt-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
546B: Keltner-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.0	3.5-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
546C2: Keltner-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.0	3.5-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
547B: Eleroy-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	3.8-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
547C2: Eleroy-----	C	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	3.8-5.5	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
572B: Loran-----	B	---	---	None	---	None	Jan-May	1.0-2.0	3.3-4.6	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
572C: Loran-----	B	---	---	None	---	None	Jan-May	1.0-2.0	3.3-4.6	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
618C2: Senachwine-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
618C3: Senachwine-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
618D2: Senachwine-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
622B: Wyanet-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
622C2: Wyanet-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
656C2: Octagon-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	3.5-4.0	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
656D2: Octagon-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	2.0-3.5	3.5-4.0	Perched
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
675A: Greenbush-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
675B: Greenbush-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
675C: Greenbush-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
675C2: Greenbush-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
686B: Parkway-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
686C2: Parkway-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
731B: Nasset-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
731C2: Nasset-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
732B: Appleriver-----	B	---	---	None	---	None	Jan-May	1.0-2.0	3.3-5.5	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
732C: Appleriver-----	B	---	---	None	---	None	Jan-May	1.0-2.0	3.3-5.5	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
735C2: Casco-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Rodman-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Fox-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
735D2: Casco-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Rodman-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Fox-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
735E2: Casco-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Rodman-----	A	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Fox-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
745B: Shullsburg-----	C	---	---	None	---	None	Jan-May	1.0-2.0	1.7-3.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
745C2: Shullsburg-----	C	---	---	None	---	None	Jan-May	1.0-2.0	1.7-3.3	Perched
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
752C2: Oneco-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
753B: Massbach-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Jun	3.5-5.0	3.5-5.5	Perched
		---	---	---	---	---	Jul-Dec	>6.0	>6.0	---
753C2: Massbach-----	B	---	---	None	---	None	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Jun	3.5-5.0	3.5-5.5	Perched
		---	---	---	---	---	Jul-Dec	>6.0	>6.0	---
802B: Orthents, loamy--	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
864. Pits, quarries										
865. Pits, gravel										
905F: NewGlarus-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Lamoille-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
928D2: NewGlarus-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
Palsgrove-----	B	---	---	None	---	None	Jan-Dec	>6.0	>6.0	---
1107A: Sawmill-----	B/D	0.0-0.5	Long	Frequent	Brief	Frequent	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-1.0	>6.0	Apparent
3074A: Radford-----	B	---	---	None	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
3107A: Sawmill-----	B/D	0.0-0.5	Brief	Frequent	Brief	Frequent	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
3451A: Lawson-----	B	---	---	None	Brief	Frequent	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8070A: Beaucoup-----	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8074A: Radford-----	B	---	---	None	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	>6.0	>6.0	---
8076A: Otter-----	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8077A: Huntsville-----	B	---	---	None	Brief	Occasional	Jan	>6.0	>6.0	---
		---	---	---	---	---	Feb-Apr	4.0-6.0	>6.0	Apparent
		---	---	---	---	---	May-Dec	>6.0	>6.0	---
8082A: Millington-----	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8103A: Houghton-----	A/D	0.0-1.0	Brief	Occasional	Very brief	Occasional	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-1.0	>6.0	Apparent
8107A: Sawmill-----	B/D	0.0-0.5	Brief	Frequent	Brief	Occasional	Jan-May	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8210A: Lena-----	D	0.0-1.0	Brief	Occasional	Very brief	Occasional	Jan-Jun	0.0-1.0	>6.0	Apparent
		---	---	---	---	---	Jul-Oct	>6.0	>6.0	---
		---	---	---	---	---	Nov-Dec	0.0-1.0	>6.0	Apparent
8239A: Dorchester-----	B	---	---	None	Brief	Occasional	Jan-Dec	>6.0	>6.0	---

Table 22.--Water Features--Continued

Map symbol and soil name	Hydro- logic group	Ponding			Flooding		Months	Water table		
		Surface water depth	Duration	Frequency	Duration	Frequency		Upper limit	Lower limit	Kind of water table
		Ft						Ft	Ft	
8415A: Orion-----	C	---	---	None	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8451A: Lawson-----	C	---	---	None	Brief	Occasional	Jan-May	1.0-2.0	>6.0	Apparent
		---	---	---	---	---	Jun-Dec	>6.0	>6.0	---
8579A: Beavercreek-----	B	---	---	None	Very brief	Occasional	Jan-Dec	>6.0	>6.0	---

Table 23.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
21B: Pecatonica-----	---	---	---	---	Moderate	Moderate	Moderate
21C2: Pecatonica-----	---	---	---	---	Moderate	Moderate	Moderate
22C2: Westville-----	---	---	---	---	Moderate	Moderate	Moderate
22C3: Westville-----	---	---	---	---	Moderate	Moderate	Moderate
22D2: Westville-----	---	---	---	---	Moderate	Moderate	Moderate
29C2: Dubuque-----	Lithic bedrock	20-40	---	---	High	Moderate	Moderate
29D2: Dubuque-----	Lithic bedrock	20-40	---	---	High	Moderate	Moderate
40C2: Dodgeville-----	Paralithic bedrock	24-40	---	---	High	Moderate	Moderate
40D2: Dodgeville-----	Paralithic bedrock	24-40	---	---	High	Moderate	Moderate
51A: Muscatune-----	---	---	---	---	High	High	Moderate
51B: Muscatune-----	---	---	---	---	High	High	Low
61A: Atterberry-----	---	---	---	---	High	High	Moderate
61B: Atterberry-----	---	---	---	---	High	High	Moderate
67A: Harpster-----	---	---	---	---	High	High	Low
68A: Sable-----	---	---	---	---	High	High	Low
86A: Osco-----	---	---	---	---	High	Moderate	Moderate
86B: Osco-----	---	---	---	---	High	Moderate	Moderate
86C: Osco-----	---	---	---	---	High	Moderate	Moderate
86C2: Osco-----	---	---	---	---	High	Moderate	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
87B: Dickinson-----	---	---	---	---	Moderate	Low	Moderate
87C2: Dickinson-----	---	---	---	---	Moderate	Low	Moderate
104A: Virgil-----	---	---	---	---	High	High	Moderate
104B: Virgil-----	---	---	---	---	High	High	Moderate
105A: Batavia-----	---	---	---	---	High	High	Moderate
105B: Batavia-----	---	---	---	---	High	High	Moderate
105C: Batavia-----	---	---	---	---	High	Moderate	Moderate
119C2: Elco-----	---	---	---	---	High	High	Moderate
134B: Camden-----	---	---	---	---	High	Moderate	Moderate
134C2: Camden-----	---	---	---	---	High	Moderate	Moderate
134C3: Camden-----	---	---	---	---	High	Moderate	Moderate
134D2: Camden-----	---	---	---	---	High	Moderate	Moderate
148A: Proctor-----	---	---	---	---	High	Moderate	Moderate
148B: Proctor-----	---	---	---	---	High	Moderate	Moderate
148C2: Proctor-----	---	---	---	---	High	Moderate	Moderate
152A: Drummer-----	---	---	---	---	High	High	Low
198A: Elburn-----	---	---	---	---	High	High	Moderate
198B: Elburn-----	---	---	---	---	High	High	Moderate
199A: Plano-----	---	---	---	---	High	Moderate	Moderate
199B: Plano-----	---	---	---	---	High	Moderate	Moderate
199C2: Plano-----	---	---	---	---	High	Moderate	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
206A: Thorp-----	---	---	---	---	High	High	Moderate
219A: Millbrook-----	---	---	---	---	High	High	Moderate
227B: Argyle-----	---	---	---	---	Moderate	Moderate	Moderate
227C2: Argyle-----	---	---	---	---	Moderate	Moderate	Moderate
233B: Birkbeck-----	---	---	---	---	High	High	Moderate
233C2: Birkbeck-----	---	---	---	---	High	High	High
233D2: Birkbeck-----	---	---	---	---	High	High	Moderate
242A: Kendall-----	---	---	---	---	High	High	High
242B: Kendall-----	---	---	---	---	High	High	Moderate
243A: St. Charles-----	---	---	---	---	High	Moderate	High
243B: St. Charles-----	---	---	---	---	High	Moderate	High
243C2: St. Charles-----	---	---	---	---	High	Moderate	High
259C2: Assumption-----	---	---	---	---	High	High	Moderate
272A: Edgington-----	---	---	---	---	High	High	Moderate
278A: Stronghurst-----	---	---	---	---	High	High	Low
279A: Rozetta-----	---	---	---	---	High	Moderate	High
279B: Rozetta-----	---	---	---	---	High	Moderate	High
280B: Fayette-----	---	---	---	---	High	Moderate	High
280C2: Fayette-----	---	---	---	---	High	Moderate	High
280C3: Fayette-----	---	---	---	---	High	Moderate	High
280D2: Fayette-----	---	---	---	---	High	Moderate	High

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
290C2: Warsaw-----	---	---	---	---	Moderate	Low	Moderate
344A: Harvard-----	---	---	---	---	High	High	Moderate
344B: Harvard-----	---	---	---	---	High	Moderate	Moderate
344C2: Harvard-----	---	---	---	---	High	Moderate	Moderate
361D3: Kidder-----	---	---	---	---	Moderate	Moderate	Low
361E2: Kidder-----	---	---	---	---	Moderate	Moderate	Moderate
363D2: Griswold-----	---	---	---	---	Moderate	Moderate	Low
403D2: Elizabeth-----	Lithic bedrock	7-20	---	---	Moderate	Low	Low
403F2: Elizabeth-----	Lithic bedrock	4-20	---	---	Moderate	Low	Low
410B: Woodbine-----	Lithic bedrock	40-60	---	---	Moderate	High	Moderate
410C2: Woodbine-----	Lithic bedrock	40-60	---	---	Moderate	High	Moderate
410C3: Woodbine-----	Lithic bedrock	40-60	---	---	Moderate	High	Moderate
410D2: Woodbine-----	Lithic bedrock	40-60	---	---	Moderate	High	Low
411B: Ashdale-----	Lithic bedrock	40-60	---	---	High	Moderate	Moderate
411C2: Ashdale-----	Lithic bedrock	40-60	---	---	High	Moderate	Moderate
412B: Ogle-----	---	---	---	---	High	Moderate	Moderate
412C2: Ogle-----	---	---	---	---	High	Moderate	Moderate
414B: Myrtle-----	---	---	---	---	High	Moderate	Moderate
414C: Myrtle-----	---	---	---	---	High	Moderate	Moderate
414C2: Myrtle-----	---	---	---	---	High	Moderate	Moderate
416B: Durand-----	---	---	---	---	Moderate	Moderate	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
416C2: Durand-----	---	---	---	---	Moderate	Moderate	Moderate
417C2: Derinda-----	Paralithic bedrock	20-40	---	---	Moderate	Moderate	Moderate
417C3: Derinda-----	Paralithic bedrock	20-40	---	---	Moderate	Moderate	Moderate
417D2: Derinda-----	Paralithic bedrock	20-40	---	---	Moderate	High	Low
418C2: Schapville-----	Paralithic bedrock	20-40	---	---	Moderate	High	Moderate
419B: Flagg-----	---	---	---	---	High	Moderate	High
419C2: Flagg-----	---	---	---	---	High	Moderate	High
429B: Palsgrove-----	Lithic bedrock	40-60	---	---	High	High	Moderate
429C2: Palsgrove-----	Lithic bedrock	40-60	---	---	High	High	Moderate
429D2: Palsgrove-----	Lithic bedrock	40-60	---	---	High	High	Moderate
506B: Hitt-----	Lithic bedrock	40-60	---	---	Moderate	Moderate	Moderate
506C2: Hitt-----	Lithic bedrock	40-60	---	---	Moderate	Moderate	Moderate
546B: Keltner-----	Paralithic bedrock	40-60	---	---	High	High	Moderate
546C2: Keltner-----	Paralithic bedrock	40-60	---	---	High	High	Low
547B: Eleroy-----	Paralithic bedrock	40-60	---	---	High	High	Moderate
547C2: Eleroy-----	Paralithic bedrock	40-60	---	---	High	High	Low
572B: Loran-----	Paralithic bedrock	40-60	---	---	High	High	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
572C: Loran-----	Paralithic bedrock	40-60	---	---	High	High	Low
618C2: Senachwine-----	---	---	---	---	Moderate	Moderate	Moderate
618C3: Senachwine-----	---	---	---	---	Moderate	Moderate	Moderate
618D2: Senachwine-----	---	---	---	---	Moderate	Moderate	Moderate
622B: Wyanet-----	---	---	---	---	Moderate	High	Moderate
622C2: Wyanet-----	---	---	---	---	Moderate	High	Moderate
656C2: Octagon-----	Dense material	24-60	---	---	Moderate	High	Moderate
656D2: Octagon-----	Dense material	24-60	---	---	Moderate	High	Moderate
675A: Greenbush-----	---	---	---	---	High	Moderate	High
675B: Greenbush-----	---	---	---	---	High	Moderate	High
675C: Greenbush-----	---	---	---	---	High	Moderate	Low
675C2: Greenbush-----	---	---	---	---	High	Moderate	High
686B: Parkway-----	---	---	---	---	High	Moderate	Moderate
686C2: Parkway-----	---	---	---	---	High	Moderate	Moderate
731B: Nasset-----	Lithic bedrock	40-60	---	---	High	Moderate	Moderate
731C2: Nasset-----	Lithic bedrock	40-60	---	---	High	Moderate	Moderate
732B: Appleriver-----	Paralithic bedrock	40-60	---	---	High	High	Moderate
732C: Appleriver-----	Paralithic bedrock	40-60	---	---	High	High	Moderate
735C2: Casco-----	---	---	---	---	Low	Moderate	Low
Rodman-----	---	---	---	---	Low	Low	Low
Fox-----	---	---	---	---	Moderate	Moderate	Low

Table 23.--Soil Features--Continued

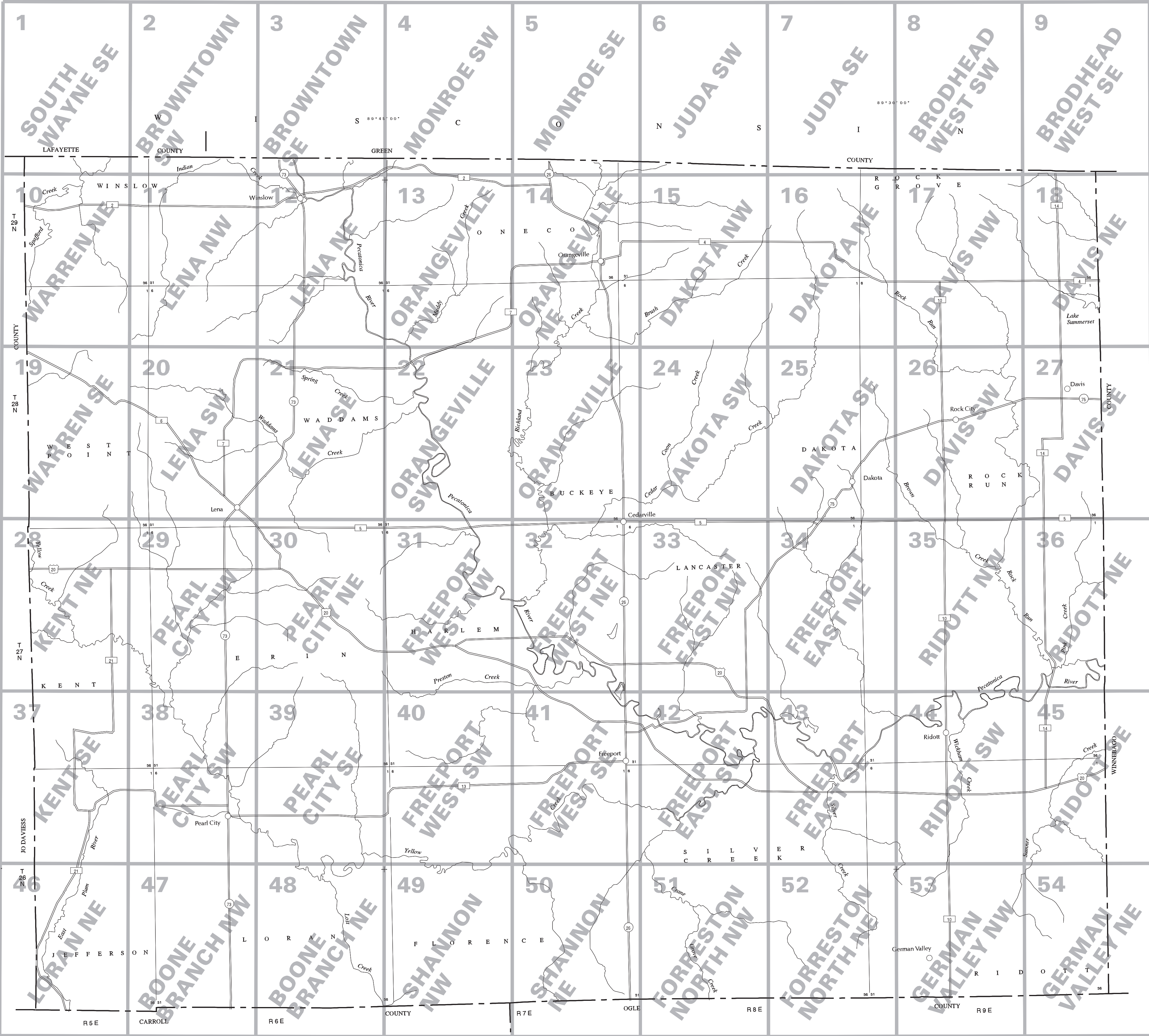
Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
735D2:							
Casco-----	---	---	---	---	Low	Moderate	Low
Rodman-----	---	---	---	---	Low	Low	Low
Fox-----	---	---	---	---	Moderate	Moderate	Low
735E2:							
Casco-----	---	---	---	---	Low	Moderate	Low
Rodman-----	---	---	---	---	Low	Low	Low
Fox-----	---	---	---	---	Moderate	Moderate	Low
745B:							
Shullsburg-----	Paralithic bedrock	20-40	---	---	High	Moderate	Low
745C2:							
Shullsburg-----	Paralithic bedrock	20-40	---	---	High	Moderate	Low
752C2:							
Oneco-----	Lithic bedrock	40-60	---	---	Moderate	High	Moderate
753B:							
Massbach-----	Paralithic bedrock	40-60	---	---	High	High	Moderate
753C2:							
Massbach-----	Paralithic bedrock	40-60	---	---	High	High	Moderate
802B:							
Orthents, loamy-----	---	---	---	---	Moderate	Low	Moderate
864.							
Pits, quarries							
865.							
Pits, gravel							
905F:							
NewGlarus-----	Lithic bedrock	20-40	---	---	High	Moderate	Low
Lamoille-----	---	---	---	---	Moderate	Moderate	Low
928D2:							
NewGlarus-----	Lithic bedrock	20-40	---	---	High	Moderate	Low
Palsgrove-----	Lithic bedrock	40-60	---	---	High	Moderate	Low
1107A:							
Sawmill-----	---	---	---	---	High	High	Low
3074A:							
Radford-----	---	---	---	---	High	High	Moderate
3107A:							
Sawmill-----	---	---	---	---	High	High	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Restrictive layer		Subsidence		Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Initial	Total		Uncoated steel	Concrete
		In	In	In			
3451A: Lawson-----	---	---	---	---	High	High	Low
8070A: Beaucoup-----	---	---	---	---	High	High	Moderate
8074A: Radford-----	---	---	---	---	High	High	Low
8076A: Otter-----	---	---	---	---	High	High	Low
8077A: Huntsville-----	---	---	---	---	High	Low	Low
8082A: Millington-----	---	---	---	---	High	High	Low
8103A: Houghton-----	---	---	1-4	55-60	High	High	Low
8107A: Sawmill-----	---	---	---	---	High	High	Low
8210A: Lena-----	---	---	1-4	50-90	High	High	Low
8239A: Dorchester-----	---	---	---	---	High	Moderate	Low
8415A: Orion-----	---	---	---	---	High	High	Low
8451A: Lawson-----	---	---	---	---	High	High	Low
8579A: Beavercreek-----	---	---	---	---	Low	Low	Low

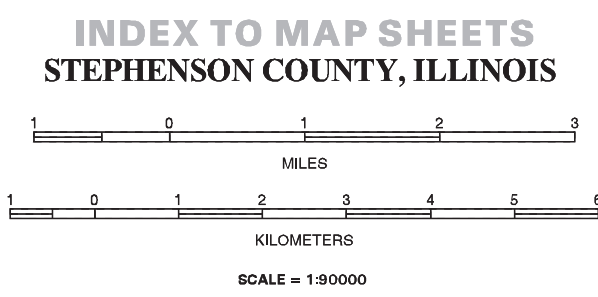
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SECTIONALIZED
TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36



SOIL LEGEND

Map unit symbols consist of a combination of numbers and letters. The initial numbers represent the kind of soil or miscellaneous area. An uppercase letter following these numbers indicates the class of slope. A final number of 2 following the slope class letter indicates that the soil is moderately eroded, and a final number of 3 indicates that the soil is severely eroded. Symbols that do not have a final number of 2 or 3 following a slope class letter indicate map units that are not eroded or are only slightly eroded. Symbols for miscellaneous areas do not have a slope class letter.

SYMBOL	NAME
21B	Pecatonica silt loam, 2 to 5 percent slopes
21C2	Pecatonica silt loam, 5 to 10 percent slopes, eroded
22C2	Westville silt loam, 5 to 10 percent slopes, eroded
22C3	Westville clay loam, 5 to 10 percent slopes, severely eroded
22D2	Westville silt loam, 10 to 18 percent slopes, eroded
29C2	Dubuque silt loam, 5 to 10 percent slopes, eroded
29D2	Dubuque silt loam, 10 to 18 percent slopes, eroded
40C2	Dodgeville silt loam, 5 to 10 percent slopes, eroded
40D2	Dodgeville silt loam, 10 to 18 percent slopes, eroded
51A	Muscatune silt loam, 0 to 2 percent slopes
51B	Muscatune silt loam, 2 to 5 percent slopes
61A	Atterberry silt loam, 0 to 2 percent slopes
61B	Atterberry silt loam, 2 to 5 percent slopes
67A	Harpster silty clay loam, 0 to 2 percent slopes
68A	Sable silty clay loam, 0 to 2 percent slopes
86A	Osko silt loam, 0 to 2 percent slopes
86B	Osko silt loam, 2 to 5 percent slopes
86C	Osko silt loam, 5 to 10 percent slopes
86C2	Osko silt loam, 5 to 10 percent slopes, eroded
87B	Dickinson sandy loam, 2 to 5 percent slopes
87C2	Dickinson sandy loam, 5 to 10 percent slopes, eroded
104A	Virgil silt loam, 0 to 2 percent slopes
104B	Virgil silt loam, 2 to 5 percent slopes
105A	Batavia silt loam, 0 to 2 percent slopes
105B	Batavia silt loam, 2 to 5 percent slopes
105C	Batavia silt loam, 5 to 10 percent slopes
119C2	Elco silt loam, 5 to 10 percent slopes, eroded
134B	Camden silt loam, 2 to 5 percent slopes
134C2	Camden silt loam, 5 to 10 percent slopes, eroded
134C3	Camden silty clay loam, 5 to 10 percent slopes, severely eroded
134D2	Camden silt loam, 10 to 18 percent slopes, eroded
148A	Proctor silt loam, 0 to 2 percent slopes
148B	Proctor silt loam, 2 to 5 percent slopes
148C2	Proctor silt loam, 5 to 10 percent slopes, eroded
152A	Drummer silty clay loam, 0 to 2 percent slopes
198A	Elburn silt loam, 0 to 2 percent slopes
198B	Elburn silt loam, 2 to 5 percent slopes
199A	Plano silt loam, 0 to 2 percent slopes
199B	Plano silt loam, 2 to 5 percent slopes
199C2	Plano silt loam, 5 to 10 percent slopes, eroded
206A	Thorp silt loam, 0 to 2 percent slopes
219A	Millbrook silt loam, 0 to 2 percent slopes
227B	Argyle silt loam, 2 to 5 percent slopes
227C2	Argyle silt loam, 5 to 10 percent slopes, eroded
233B	Birkbeck silt loam, 2 to 5 percent slopes
233C2	Birkbeck silt loam, 5 to 10 percent slopes, eroded
233D2	Birkbeck silt loam, 10 to 18 percent slopes, eroded
242A	Kendall silt loam, 0 to 2 percent slopes
242B	Kendall silt loam, 2 to 5 percent slopes
243A	St. Charles silt loam, 0 to 2 percent slopes
243B	St. Charles silt loam, 2 to 5 percent slopes
243C2	St. Charles silt loam, 5 to 10 percent slopes, eroded
259C2	Assumption silt loam, 5 to 10 percent slopes, eroded
272A	Edgington silt loam, 0 to 2 percent slopes
278A	Stronghurst silt loam, 0 to 2 percent slopes
279A	Rozetta silt loam, 0 to 2 percent slopes
279B	Rozetta silt loam, 2 to 5 percent slopes
280B	Fayette silt loam, 2 to 5 percent slopes
280C2	Fayette silt loam, 5 to 10 percent slopes, eroded
280C3	Fayette silty clay loam, 5 to 10 percent slopes, severely eroded
280D2	Fayette silt loam, 10 to 18 percent slopes, eroded
290C2	Warsaw silt loam, 5 to 10 percent slopes, eroded
344A	Harvard silt loam, 0 to 2 percent slopes
344B	Harvard silt loam, 2 to 5 percent slopes
344C2	Harvard silt loam, 5 to 10 percent slopes, eroded
361D3	Kidder clay loam, 6 to 12 percent slopes, severely eroded
361E2	Kidder loam, 12 to 18 percent slopes, eroded
363D2	Griswold loam, 6 to 12 percent slopes, eroded
403D2	Elizabeth silt loam, 10 to 18 percent slopes, eroded
403F2	Elizabeth silt loam, 18 to 35 percent slopes, eroded
410B	Woodbine silt loam, 2 to 5 percent slopes
410C2	Woodbine silt loam, 5 to 10 percent slopes, eroded
410C3	Woodbine silty clay loam, 5 to 10 percent slopes, severely eroded
410D2	Woodbine silt loam, 10 to 18 percent slopes, eroded

SYMBOL	NAME
411B	Ashdale silt loam, 2 to 5 percent slopes
411C2	Ashdale silt loam, 5 to 10 percent slopes, eroded
412B	Ogle silt loam, 2 to 5 percent slopes
412C2	Ogle silt loam, 5 to 10 percent slopes, eroded
414B	Myrtle silt loam, 2 to 5 percent slopes
414C	Myrtle silt loam, 5 to 10 percent slopes
414C2	Myrtle silt loam, 5 to 10 percent slopes, eroded
416B	Durand silt loam, 2 to 5 percent slopes
416C2	Durand silt loam, 5 to 10 percent slopes, eroded
417C2	Derinda silt loam, 5 to 10 percent slopes, eroded
417C3	Derinda silty clay loam, 5 to 10 percent slopes, severely eroded
417D2	Derinda silt loam, 10 to 18 percent slopes, eroded
418C2	Schapville silt loam, 5 to 10 percent slopes, eroded
419B	Flagg silt loam, 2 to 5 percent slopes
419C2	Flagg silt loam, 5 to 10 percent slopes, eroded
429B	Palsgrove silt loam, 2 to 5 percent slopes
429C2	Palsgrove silt loam, 5 to 10 percent slopes, eroded
429D2	Palsgrove silt loam, 10 to 18 percent slopes, eroded
506B	Hitt silt loam, 2 to 5 percent slopes
506C2	Hitt silt loam, 5 to 10 percent slopes, eroded
546B	Keltner silt loam, 2 to 5 percent slopes
546C2	Keltner silt loam, 5 to 10 percent slopes, eroded
547B	Eleroy silt loam, 2 to 5 percent slopes
547C2	Eleroy silt loam, 5 to 10 percent slopes, eroded
572B	Loran silt loam, 2 to 5 percent slopes
572C	Loran silt loam, 5 to 10 percent slopes
618C2	Senachwine silt loam, 5 to 10 percent slopes, eroded
618C3	Senachwine clay loam, 5 to 10 percent slopes, severely eroded
618D2	Senachwine silt loam, 10 to 18 percent slopes, eroded
622B	Wyanet silt loam, 2 to 5 percent slopes
622C2	Wyanet silt loam, 5 to 10 percent slopes, eroded
656C2	Octagon silt loam, 4 to 6 percent slopes, eroded
656D2	Octagon silt loam, 6 to 12 percent slopes, eroded
675A	Greenbush silt loam, 0 to 2 percent slopes
675B	Greenbush silt loam, 2 to 5 percent slopes
675C	Greenbush silt loam, 5 to 10 percent slopes
675C2	Greenbush silt loam, 5 to 10 percent slopes, eroded
686B	Parkway silt loam, 2 to 5 percent slopes
686C2	Parkway silt loam, 5 to 10 percent slopes, eroded
731B	Nasset silt loam, 2 to 5 percent slopes
731C2	Nasset silt loam, 5 to 10 percent slopes, eroded
732B	Appleriver silt loam, 2 to 5 percent slopes
732C	Appleriver silt loam, 5 to 10 percent slopes
735C2	Casco-Rodman-Fox complex, 4 to 6 percent slopes, eroded
735D2	Casco-Rodman-Fox complex, 6 to 12 percent slopes, eroded
735E2	Casco-Rodman-Fox complex, 12 to 20 percent slopes, eroded
745B	Shullsburg silt loam, 2 to 5 percent slopes
745C2	Shullsburg silt loam, 5 to 10 percent slopes, eroded
752C2	Oneco silt loam, 5 to 10 percent slopes, eroded
753B	Massbach silt loam, 2 to 5 percent slopes
753C2	Massbach silt loam, 5 to 10 percent slopes, eroded
802B	Orthents, loamy, undulating
864	Pits, quarries
865	Pits, gravel
905F	NewGlarus-Lamoille silt loams, 18 to 35 percent slopes
928D2	NewGlarus-Palsgrove silt loams, 10 to 18 percent slopes, eroded
1107A	Sawmill silty clay loam, undrained, 0 to 2 percent slopes, frequently flooded
3074A	Radford silt loam, 0 to 2 percent slopes, frequently flooded
3107A	Sawmill silty clay loam, 0 to 2 percent slopes, frequently flooded
3451A	Lawson silt loam, 0 to 2 percent slopes, frequently flooded
8070A	Beaucoup silty clay loam, 0 to 2 percent slopes, occasionally flooded
8074A	Radford silt loam, 0 to 2 percent slopes, occasionally flooded
8076A	Otter silt loam, 0 to 2 percent slopes, occasionally flooded
8077A	Huntsville silt loam, 0 to 2 percent slopes, occasionally flooded
8082A	Millington silt loam, 0 to 2 percent slopes, occasionally flooded
8103A	Houghton muck, 0 to 2 percent slopes, occasionally flooded
8107A	Sawmill silty clay loam, 0 to 2 percent slopes, occasionally flooded
8210A	Lena muck, 0 to 2 percent slopes, occasionally flooded
8239A	Dorchester silt loam, 0 to 2 percent slopes, occasionally flooded
8415A	Orion silt loam, 0 to 2 percent slopes, occasionally flooded
8451A	Lawson silt loam, 0 to 2 percent slopes, occasionally flooded
8579A	Beavercreek silt loam, 0 to 2 percent slopes, occasionally flooded
M-W	Miscellaneous water
W	Water

CONVENTIONAL AND SPECIAL
SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES	
National, state, or province	— — — — —
County or parish	————— —
Minor civil division	— — — — —
Reservation (national forest or park, state forest or park)	———— — — —
Land grant	— — — — —
Limit of soil survey (label) and/or denied access area	—————
Field sheet matchline & neatline	—————
Previously Published Survey	—————
OTHER BOUNDARY (label)	
Airport, airfield	
Cemetery	
City/county park	

STATE COORDINATE TICK 1 890 000 FEET	
LAND DIVISION CORNER (section and land grants)	
GEOGRAPHIC COORDINATE TICK	
TRANSPORTATION	

Divided roads	=====
Other roads	—————
Trail	- - - - -

ROAD EMBLEM & DESIGNATIONS	
Interstate	
Federal	
State	
County, farm or ranch	

RAILROAD	
POWER TRANSMISSION LINE (normally not shown)	
PIPE LINE (normally not shown)	
FENCE (normally not shown)	

LEVEES	
Without road	
With road	
With railroad	
Single side slope (showing actual feature location)	

DAMS	
Medium or Small	
LANDFORM FEATURES	
Prominent hill or peak	
Soil Sample Site	

MISCELLANEOUS CULTURAL FEATURES	
Farmstead, house (omit in urban areas)	
Church	
School	
Other Religion (label)	
Located object (label)	
Tank (label)	
Lookout Tower	
Oil and/or Natural Gas Wells	
Windmill	
Lighthouse	

HYDROGRAPHIC FEATURES

STREAMS	
Perennial, double line	
Perennial, single line	
Intermittent	
Drainage end	

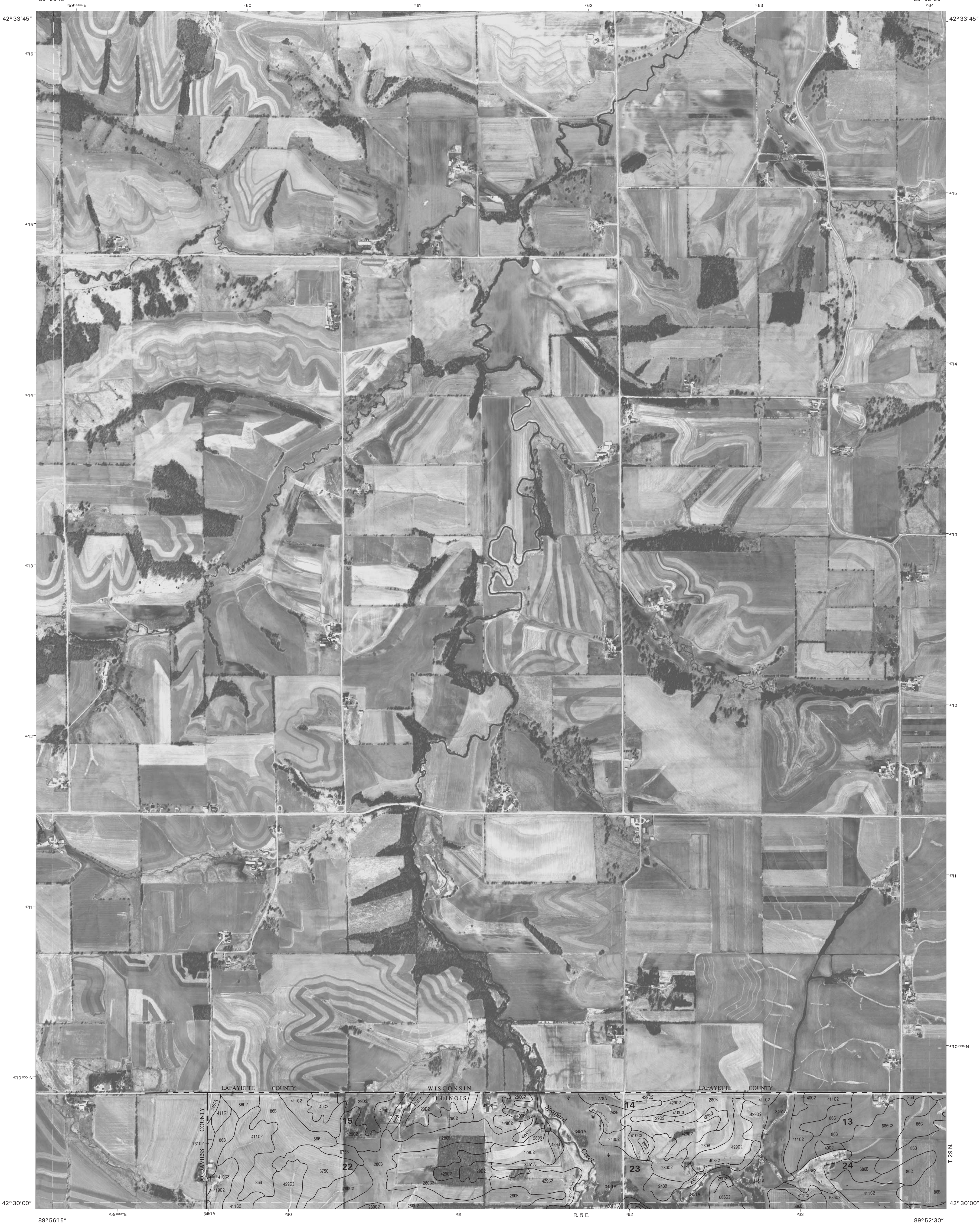
DRAINAGE AND IRRIGATION	
Double-line canal (label)	
Perennial drainage and/or irrigation ditch	
Intermittent drainage and/ or irrigation ditch	

SMALL LAKES, PONDS AND RESERVOIRS	
Perennial water	
Miscellaneous water	
Flood pool line	

MISCELLANEOUS WATER FEATURES	
Spring	
Well, artesian	
Well, irrigation	

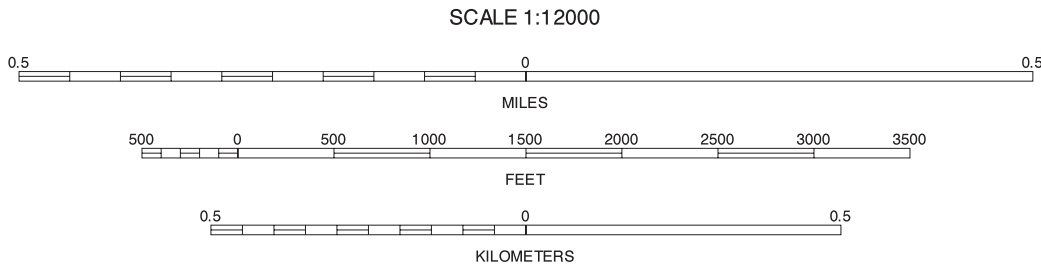
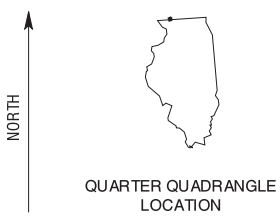
SPECIAL SYMBOLS FOR SOIL
SURVEY AND SSURGO

SOIL DELINEATIONS AND SYMBOLS	
LANDFORM FEATURES	
ESCARPMENTS	
Bedrock	
Other than bedrock	
SHORT STEEP SLOPE	
GULLY	
DEPRESSION, closed	
SINKHOLE	
EXCAVATIONS	
PITS	
Borrow pits	
Gravel pit	
Mine or quarry	
LANDFILL	
MISCELLANEOUS SURFACE FEATURES	
Blowout	
Clay spot	
Gravelly spot	
Lava flow	
Marsh or swamp	
Rock outcrop (includes sandstone and shale)	
Saline spot	
Sandy spot	
Severely eroded spot	
Slide or slip	
Sodic spot	
Spoil area	
Stony spot	
Very stony spot	
Wet spot	
AD HOC FEATURES	
Calcareous spot	
Cherty spot	
Muck spot	



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 2001 aerial photography.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



2	2 BROWNTOWN SW
10	10 WARREN NE
11	11 LENA NW

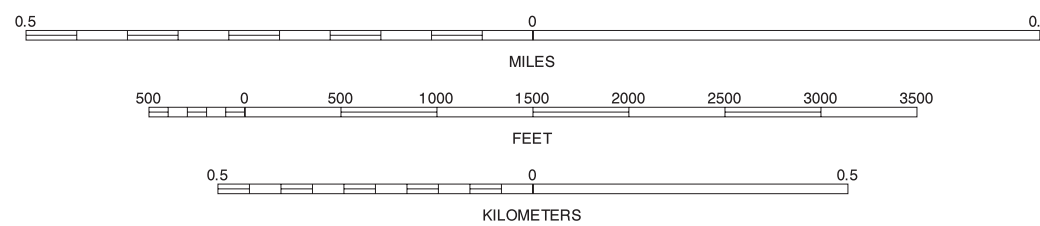
INDEX TO ADJOINING 3.75 MAPS

SOUTH WAYNE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 1 OF 54

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



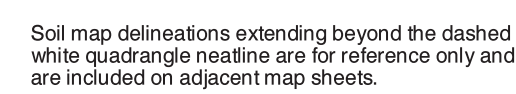
North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are
approximately positioned. Digital data are available for
this quadrangle.

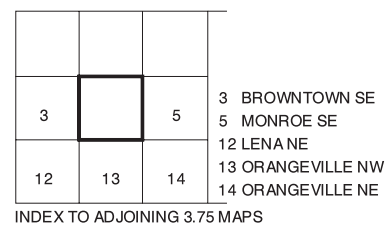


1		3	1 SOUTH WAYNE SE 3 BROWNSTOWN SE 10 WARREN NE 11 LENA NW 12 LENA NE
10	11	12	

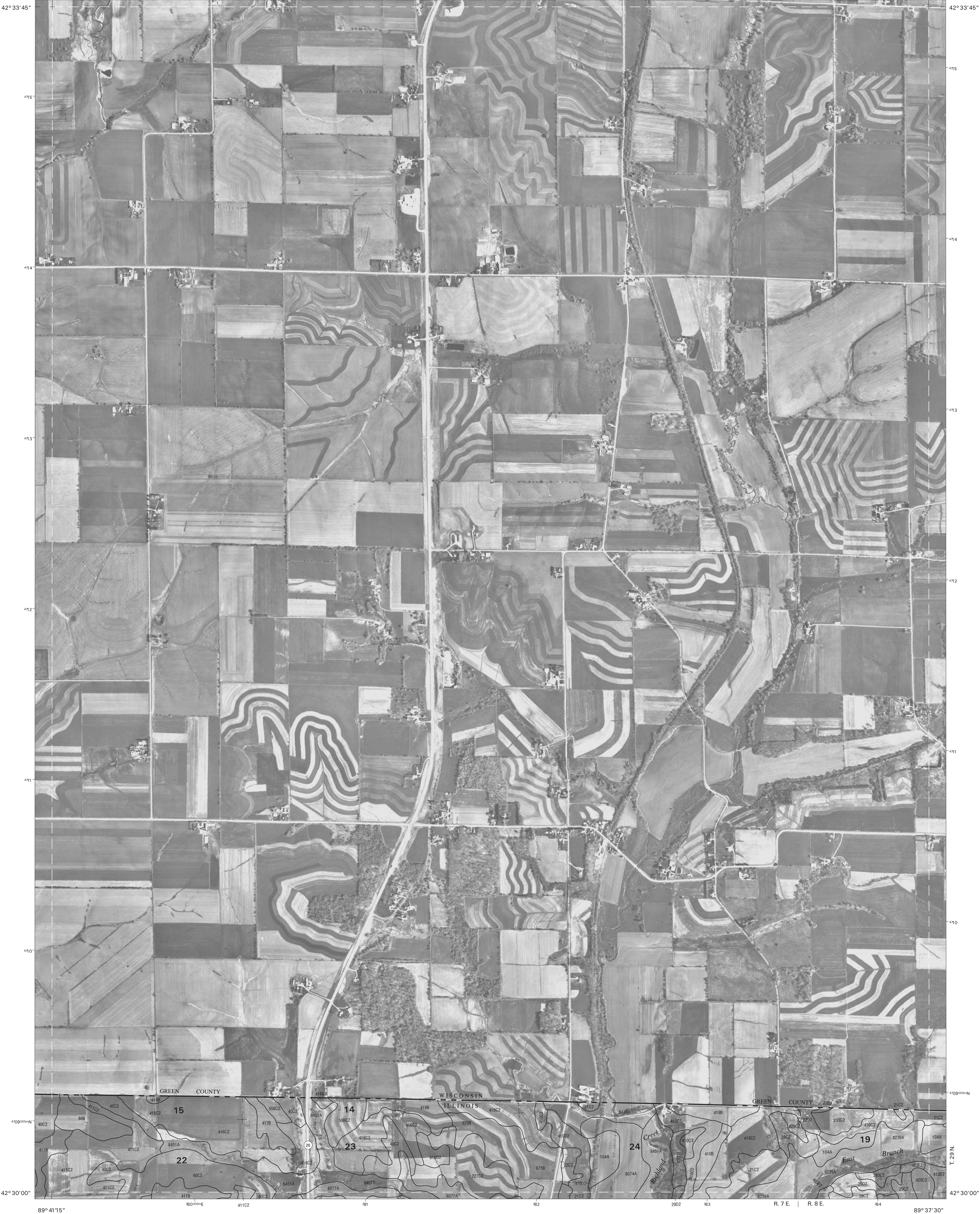
INDEX TO ADJOINING 3.75 MAPS

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



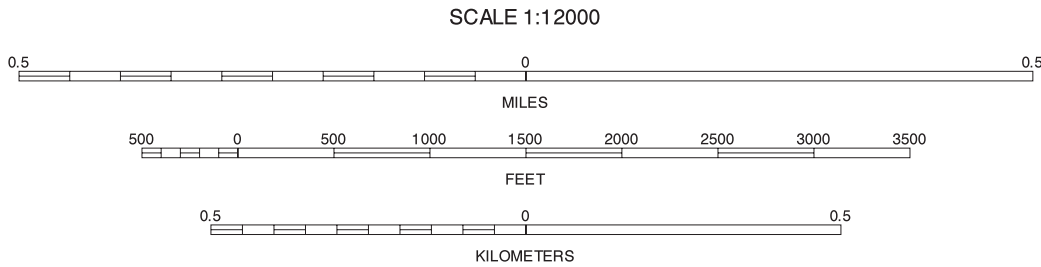
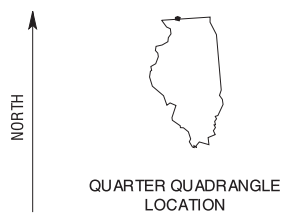


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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



4	6
13	15

INDEX TO ADJOINING 3.75 MAPS

4 MONROE SW
6 JUDA SW
13 ORANGEVILLE NW
14 ORANGEVILLE NE
15 DAKOTA NW

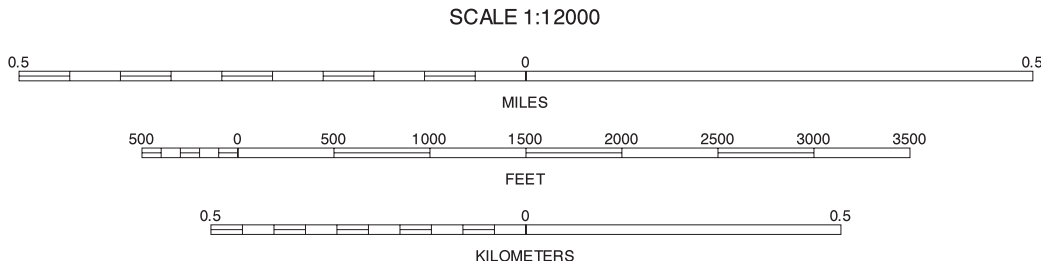
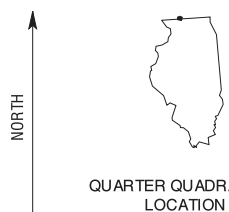
MONROE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 5 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

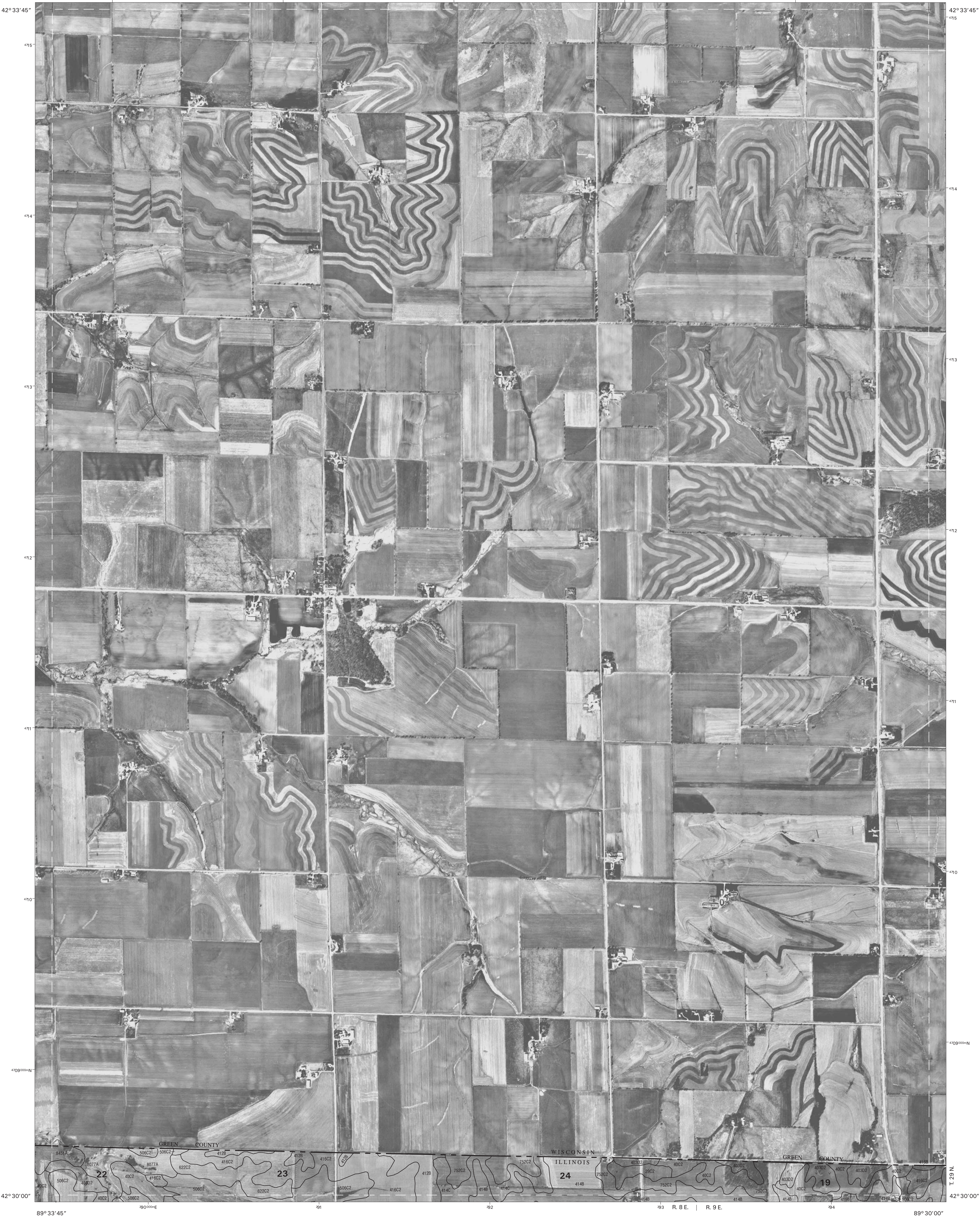


5	7
14	15
16	18

INDEX TO ADJOINING 3.75 MAPS

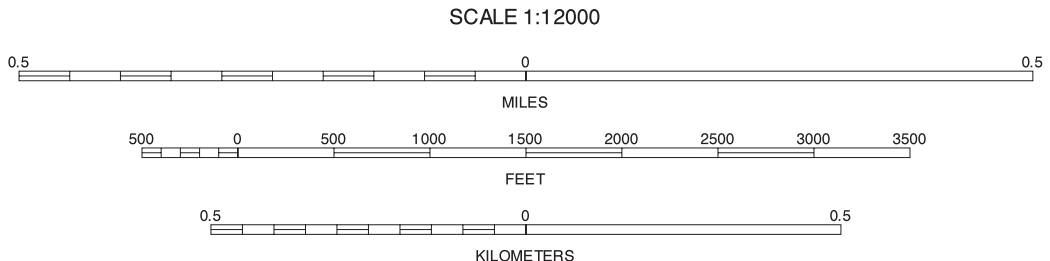
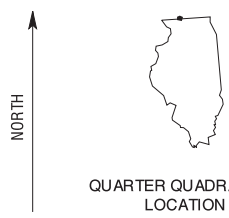
JUDA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 6 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



6	8
15	17

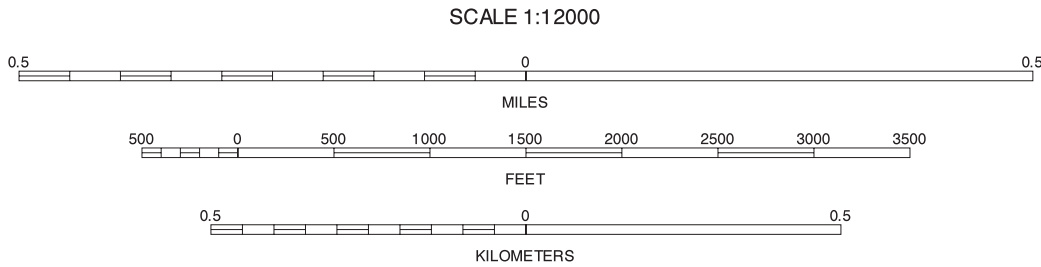
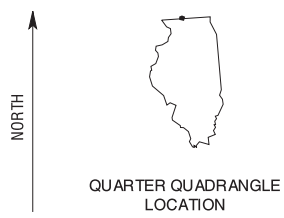
INDEX TO ADJOINING 3.75 MAPS

JUDA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 7 OF 54
Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.



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7	8	9
16	17	18

INDEX TO ADJOINING 3.75 MAPS

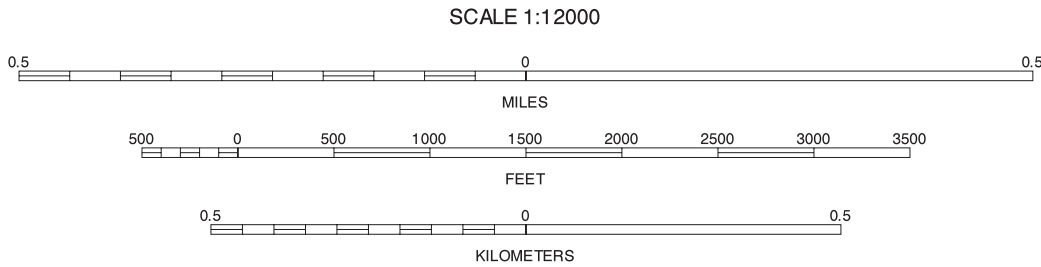
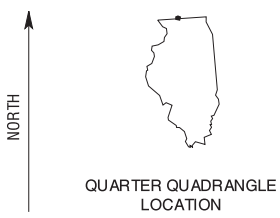
BRODHEAD WEST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 8 OF 54

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8	8	8
17	18	18

INDEX TO ADJOINING 3.75 MAPS

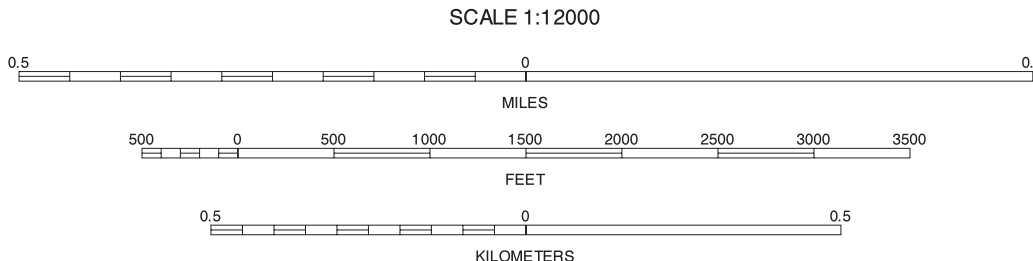
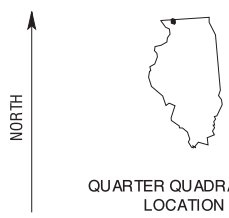
BRODHEAD WEST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 9 OF 54

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



1	2	1 SOUTH WAYNE SE
11	11	11 LENA NW
19	20	19 WARREN SE
		20 LENA SW

INDEX TO ADJOINING 3.75 MAPS

WARREN NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 10 OF 54

Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.



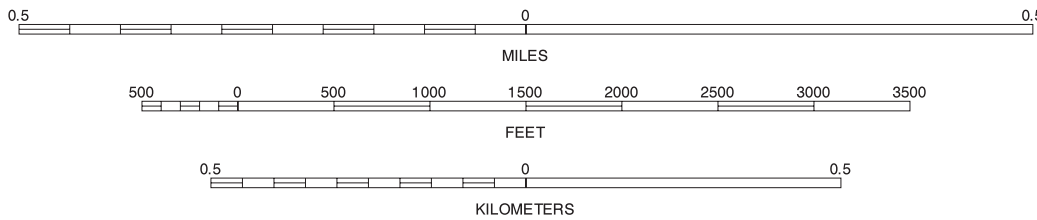
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 2001 aerial photography.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

SCALE 1:12000

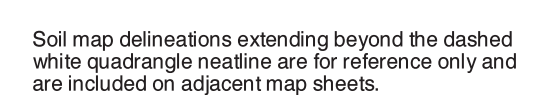


1	2	3
10		12
19	20	21

INDEX TO ADJOINING 3.75 MAPS

LENA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 11 OF 54

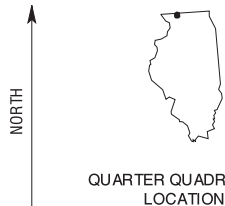
Soil map delineations extending beyond the dashed white quadrangle neoline are for reference only and are included on adjacent map sheets.



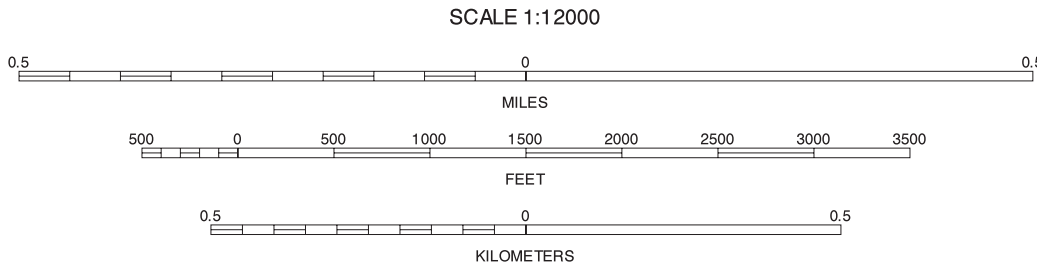


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION



3	4	5
12	13	14
21	22	23

INDEX TO ADJOINING 3.75 MAPS

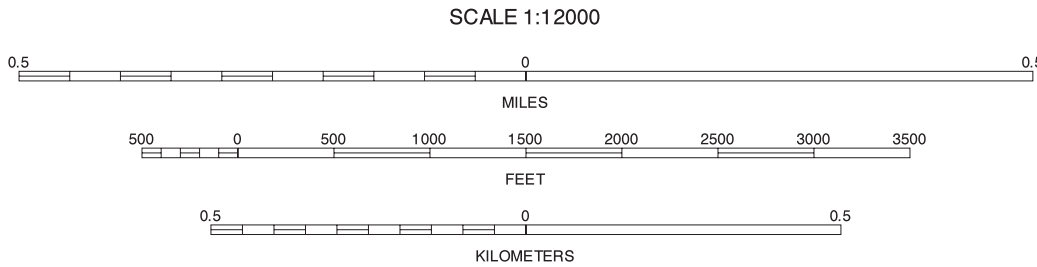
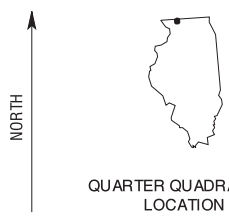
ORANGEVILLE NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 13 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

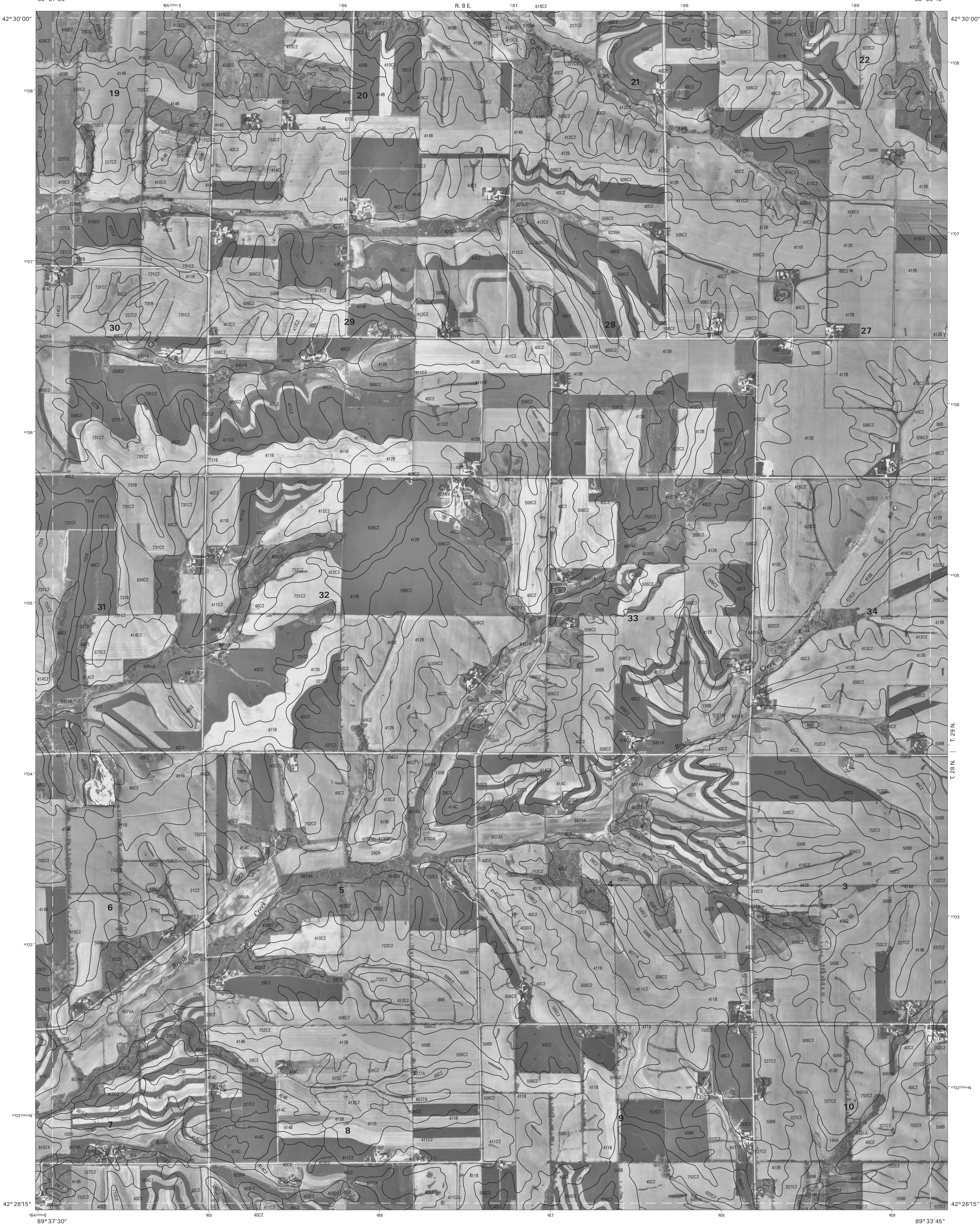


4	5	6	4 MONROE SW 5 MONROE SE 6 JUDA SW
13		15	13 ORANGEVILLE NW 15 DAKOTA NW 22 ORANGEVILLE SW 23 ORANGEVILLE SE 24 DAKOTA SW
22	23	24	

INDEX TO ADJOINING 3.75 MAPS

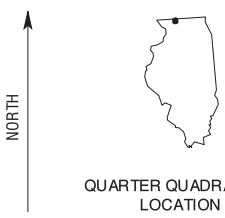
ORANGEVILLE NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 14 OF 54

Soil map delineations extending beyond the dashed white quadrangle neoline are for reference only and are included on adjacent map sheets.

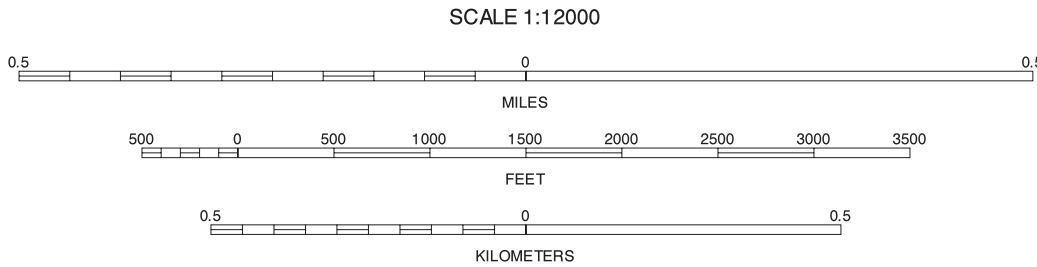


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION



5	6	7	5 MONROE SE 6 JUDA SW 7 JUDA SE
14		16	14 ORANGEVILLE NE 16 DAKOTA NE 23 ORANGEVILLE SE 24 DAKOTA SW 25 DAKOTA SE
23	24	25	

INDEX TO ADJOINING 3.75 MAPS

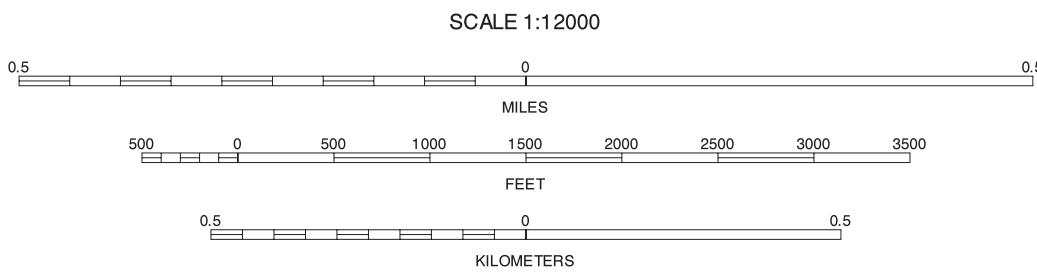
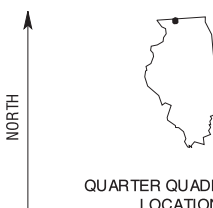
DAKOTA NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 15 OF 54

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6	7	8	6 JUDA SW
			7 JUDA SE
			8 BROODHEAD WEST SW
15		17	15 DAKOTA NW
			17 DAVIS NW
			24 DAKOTA SW
24	25	26	25 DAKOTA SE
			26 DAVIS SW

INDEX TO ADJOINING 3.75 MAPS

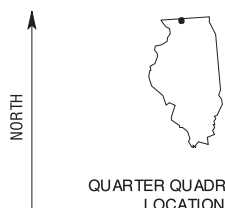
DAKOTA NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 16 OF 54

Soil map delineations extending beyond the dashed white quadrangle neoline are for reference only and are included on adjacent map sheets.

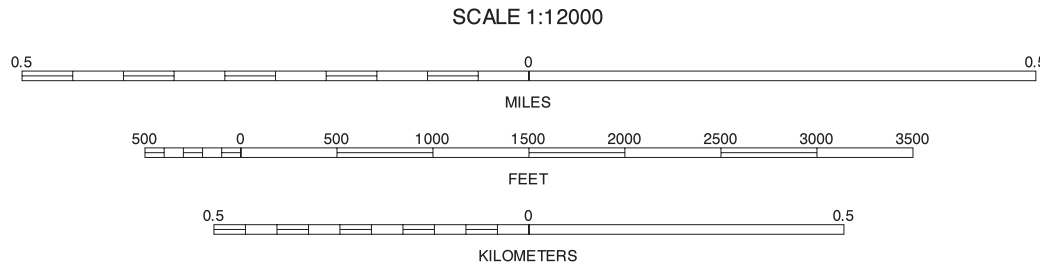


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION



7	8	9	7 JUDA SE 8 BROODHEAD WEST SW 9 BROODHEAD WEST SE
16		18	16 DAKOTANE 18 DAVIS NE 26 DAKOTA SE 26 DAVIS SW 27 DAVIS SE
25	26	27	

INDEX TO ADJOINING 3.75 MAPS

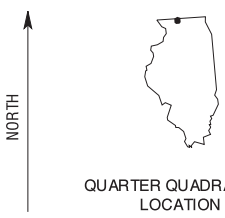
DAVIS NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 17 OF 54

Soil map delineations extending beyond the dashed white quadrangle neoline are for reference only and are included on adjacent map sheets.

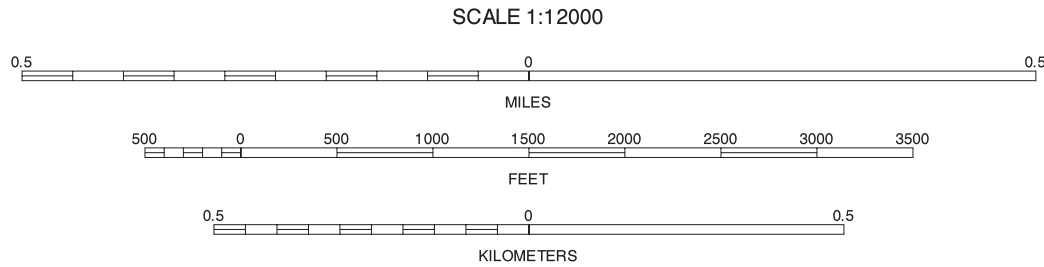


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION



8	9	8 BRODHEAD WEST SW 9 BRODHEAD WEST SE
17		17 DAVIS NW 26 DAVIS SW 27 DAVIS SE
26	27	

INDEX TO ADJOINING 3.75 MAPS

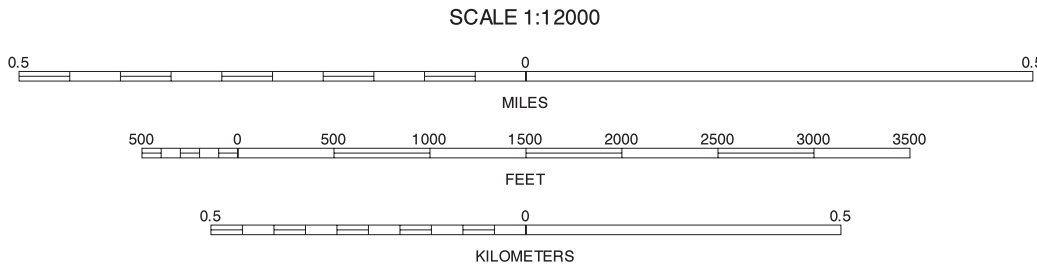
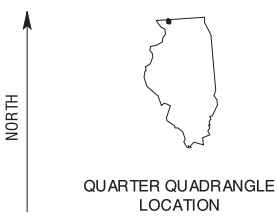
DAVIS NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 18 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



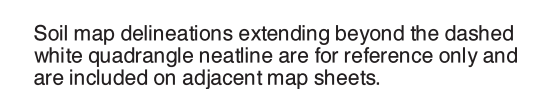
10	11	10 WARREN NE
20	20	11 LENA NW
28	29	20 LENA SW
		28 KENT NE
		29 PEARL CITY NW

INDEX TO ADJOINING 3.75 MAPS

WARREN SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 19 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.

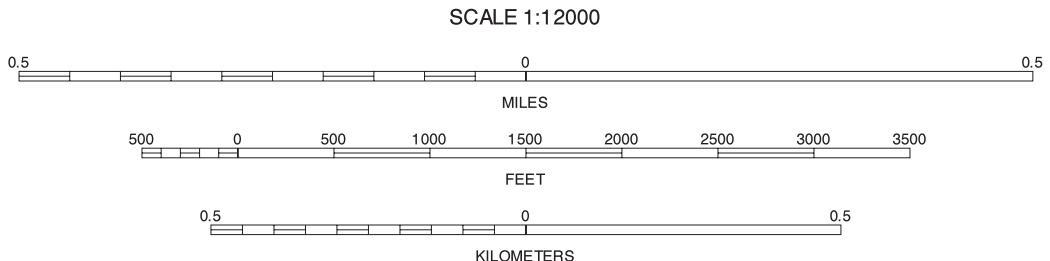
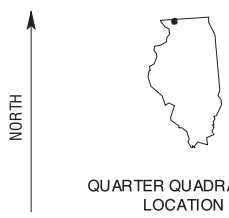
STEPHENSON COUNTY, ILLINOIS
LENA SW QUADRANGLE
SHEET NUMBER 20 OF 54
89° 48' 45"





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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



11	12	13
20	21	22
29	30	31

INDEX TO ADJOINING 3.75 MAPS

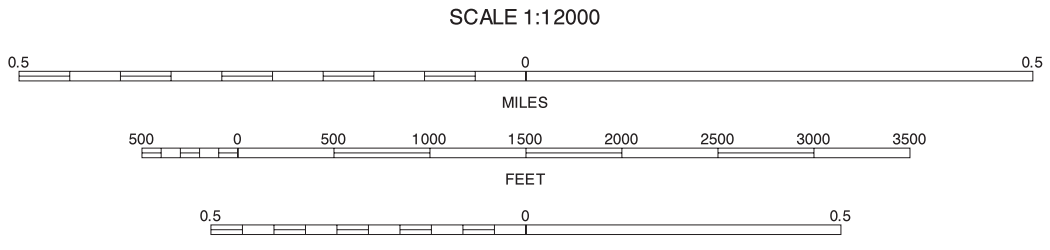
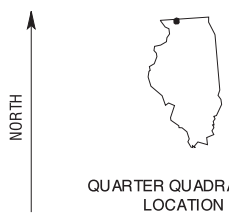
LENA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 21 OF 54

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12	13	14
21	22	23
30	31	32

ORANGEVILLE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 22 OF 54

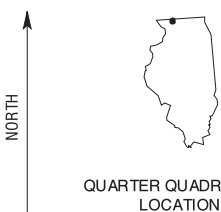
Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.

INDEX TO ADJOINING 3.75 MAPS

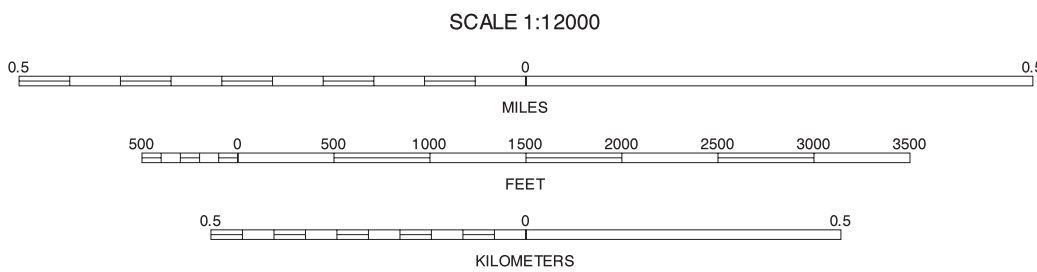


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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

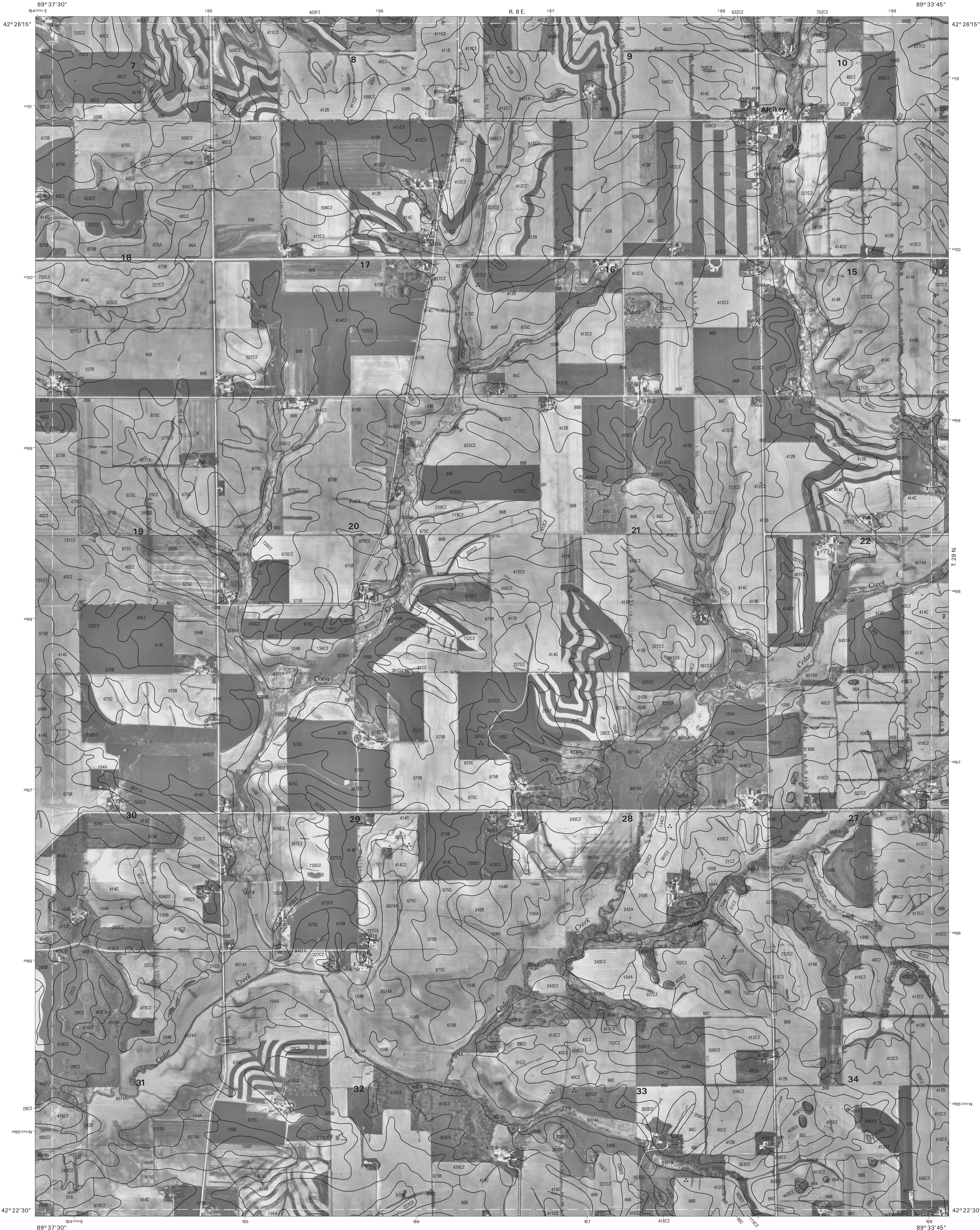


13	14	15
22		24
31	32	33

INDEX TO ADJOINING 3.75 MAPS

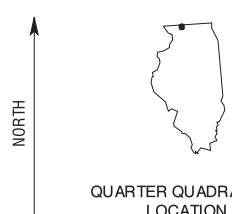
ORANGEVILLE SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 23 OF 54

Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.

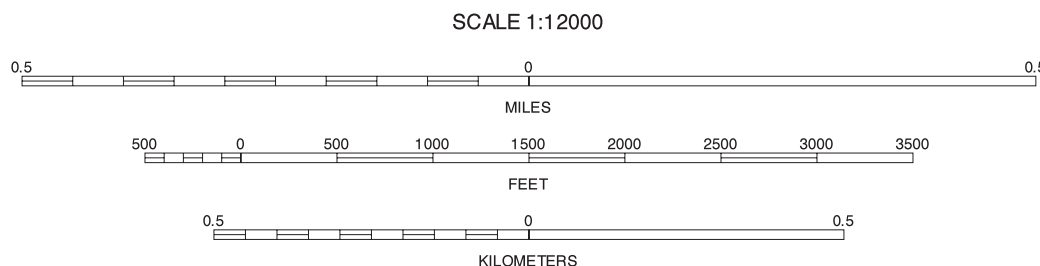


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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION



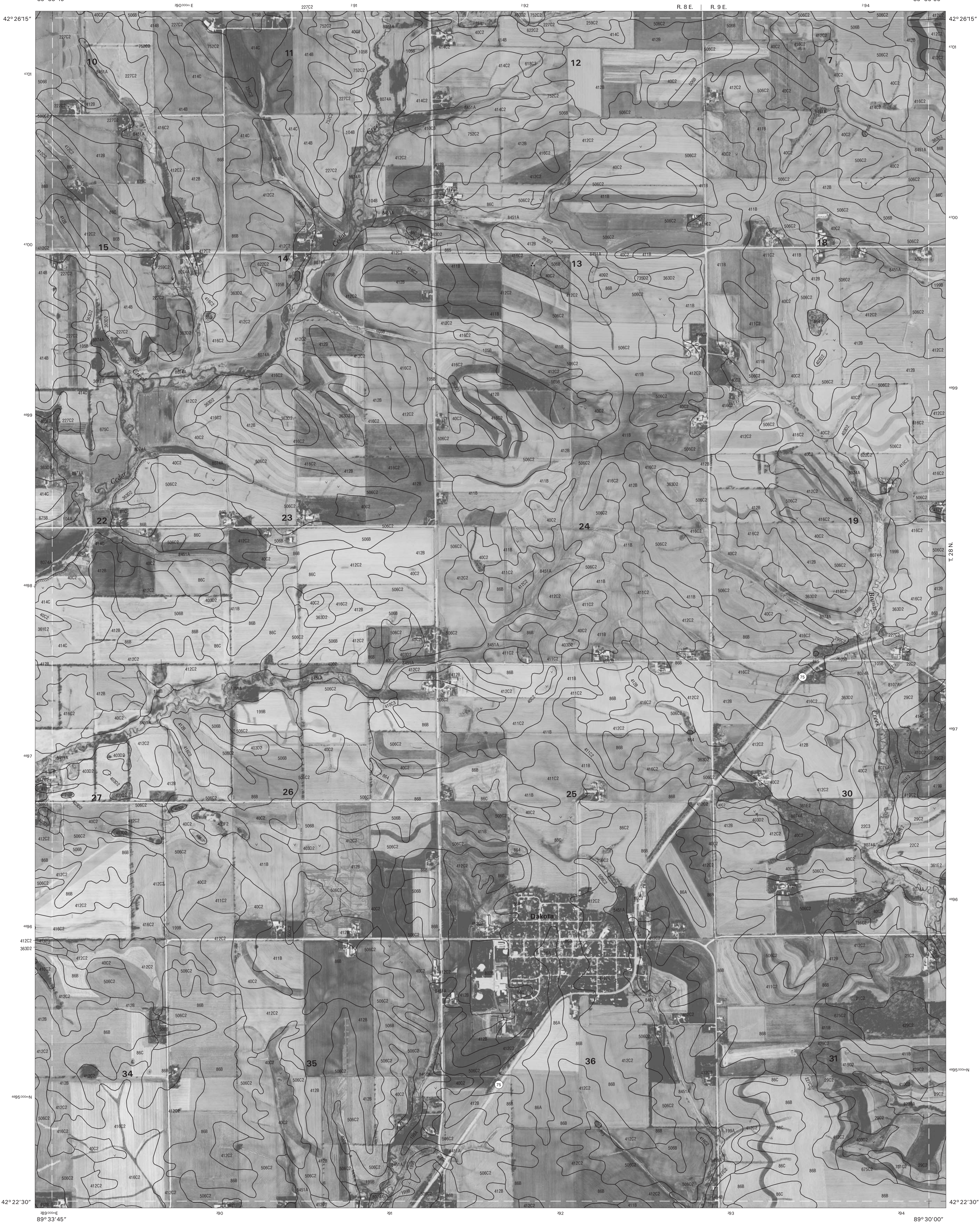
SCALE 1:12000

14	15	16
23		25
32	33	34

INDEX TO ADJOINING 3.75 MAPS

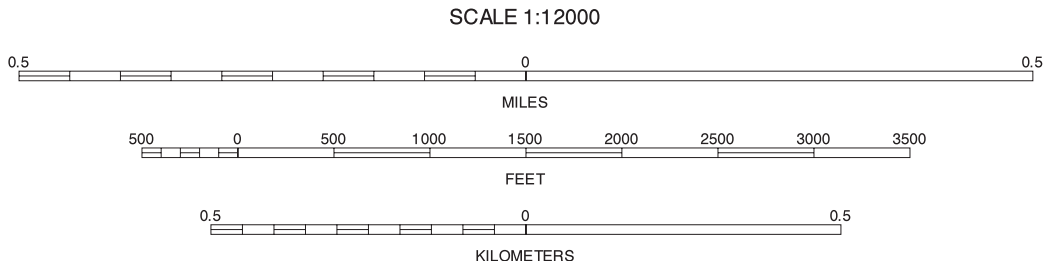
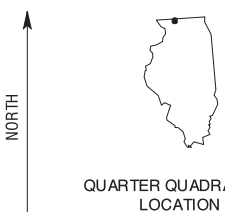
DAKOTA SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 24 OF 54

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



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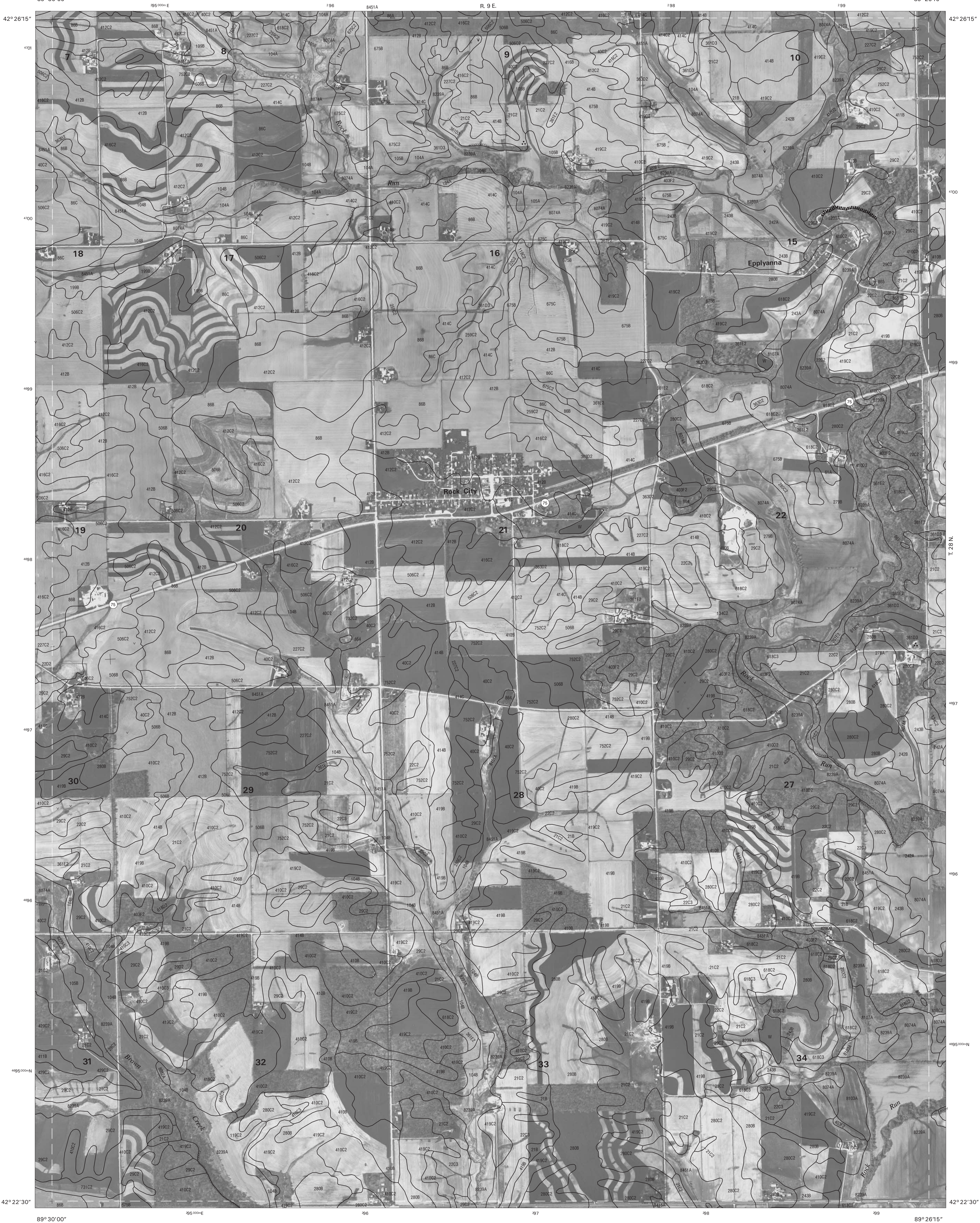
North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



15	16	17
24	25	26
33	34	35

DAKOTA SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 25 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.

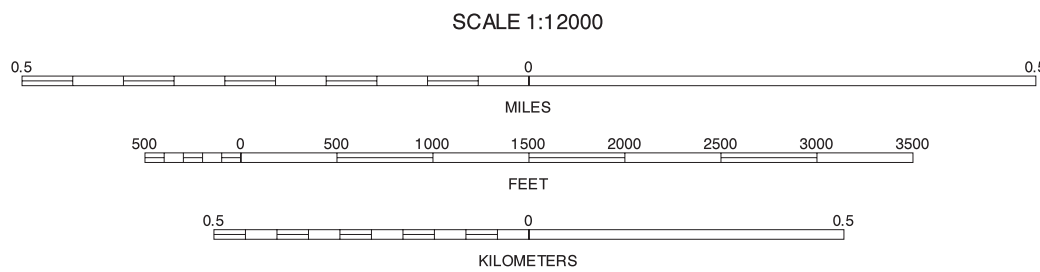


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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION



16	17	18
25	26	27
34	35	36

INDEX TO ADJOINING 3.75 MAPS

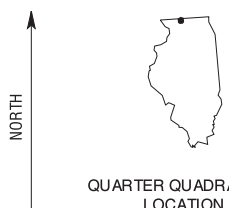
DAVIS SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 26 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.

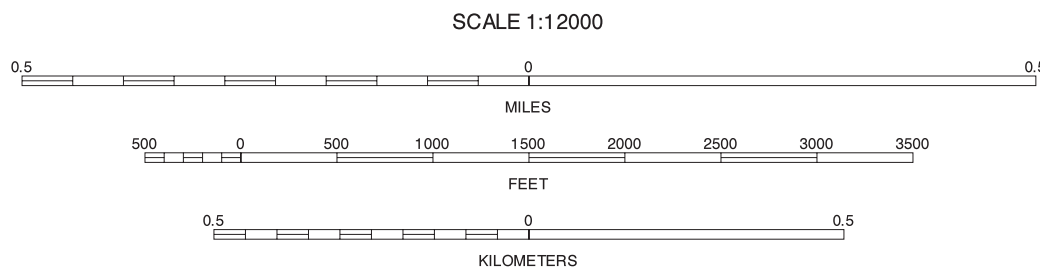


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION



17	18	17 DAVIS NW 18 DAVIS NE
26		26 DAVIS SW
35	36	35 RIDOTT NW 36 RIDOTT NE

INDEX TO ADJOINING 3.75 MAPS

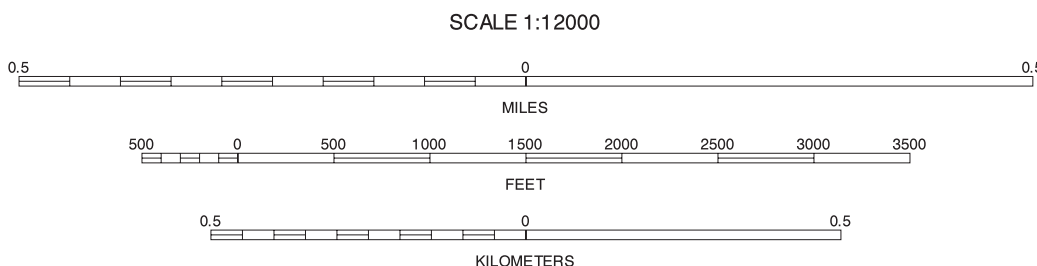
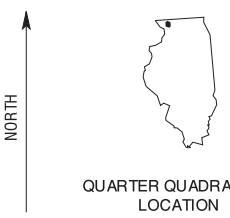
DAVIS SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 27 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



19	20	19 WARREN SE 20 LENA SW
29	29	29 PEARL CITY NW
37	38	37 KENT SE 38 PEARL CITY SW

INDEX TO ADJOINING 3.75 MAPS

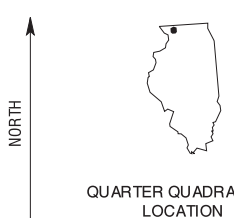
KENT NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 28 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.

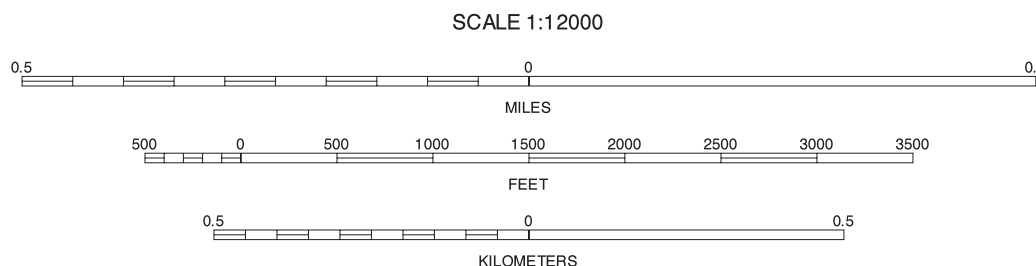


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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION



19	20	21
28	30	31
37	38	39

INDEX TO ADJOINING 3.75 MAPS

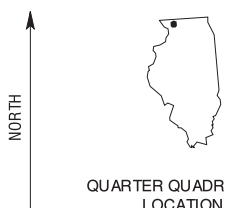
PEARL CITY NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 29 OF 54

Soil map delineations extending beyond the dashed white quadrangle neoline are for reference only and are included on adjacent map sheets.

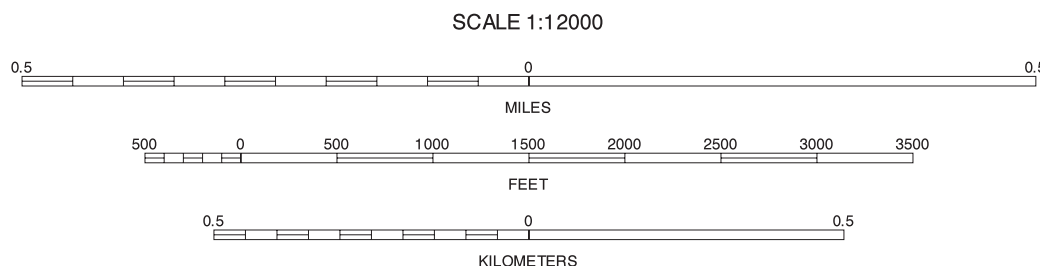


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION



20	21	22	20 LENA SW 21 LENA SE 22 ORANGEVILLE SW
29	30	31	29 PEARL CITY NW 30 FREEPORT WEST NW 31 PEARL CITY SW
38	39	40	38 PEARL CITY SE 39 FREEPORT WEST SW

INDEX TO ADJOINING 3.75 MAPS

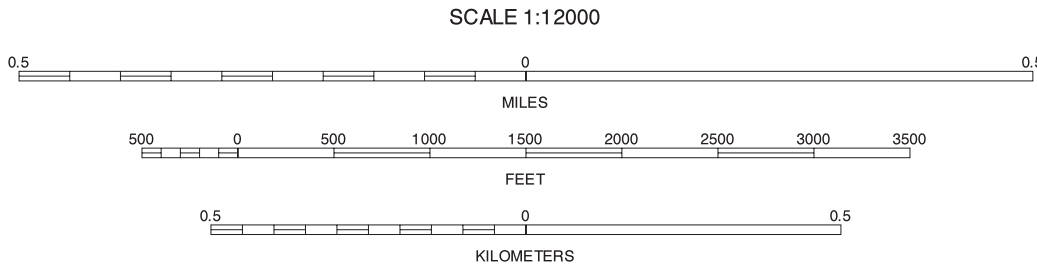
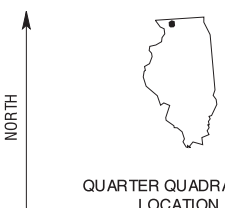
PEARL CITY NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 30 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



21	22	23	21 LENA SE
			22 ORANGEVILLE SW
			23 ORANGEVILLE SE
30		32	30 PEARL CITY NE
			31 FREEPORT WEST NE
			32 PEARL CITY SE
39	40	41	40 FREEPORT WEST SW
			41 FREEPORT WEST SE

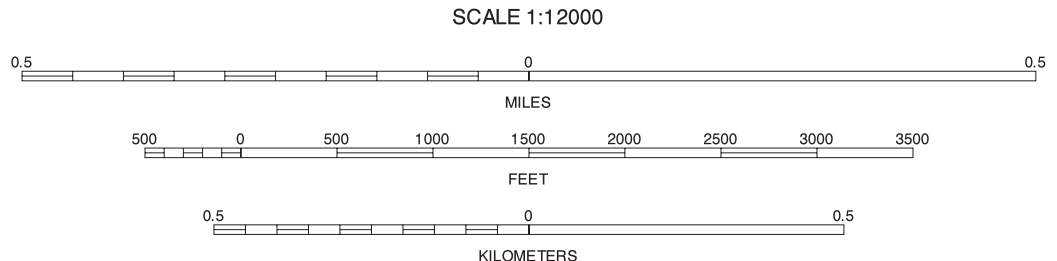
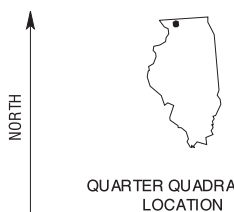
FREEPORT WEST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 31 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



22	23	24	22 ORANGEVILLE SW 23 ORANGEVILLE SE 24 DAKOTA SW
31		33	31 FREEPORT WEST NW 33 FREEPORT EAST NW 40 FREEPORT WEST SW 41 FREEPORT WEST SE 42 FREEPORT EAST SW
40	41	42	

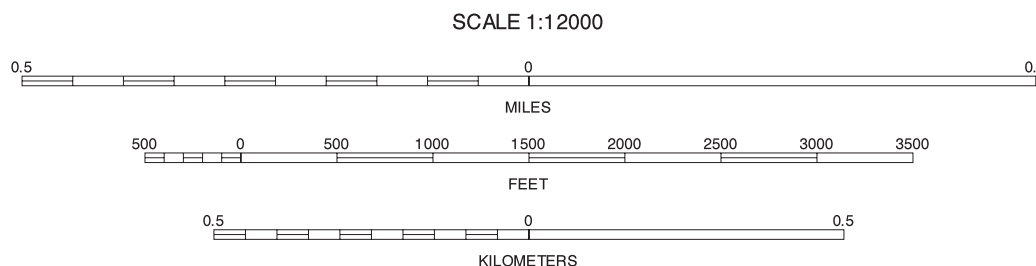
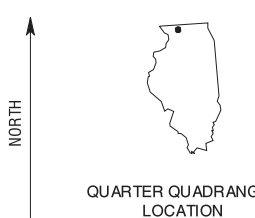
FREEPORT WEST NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 32 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

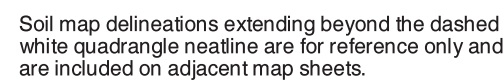


23	24	25	23 ORANGEVILLE SE
32	33	34	24 DAKOTA SW
41	42	43	25 DAKOTA SE
			32 FREEPORT WEST NE
			34 FREEPORT EAST NE
			41 FREEPORT WEST SE
			42 FREEPORT EAST SW
			43 FREEPORT EAST SE

FREEPORT EAST NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 33 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.

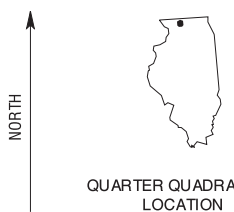
STEPHENSON COUNTY, ILLINOIS
FREEPORT EAST NE QUADRANGLE
SHEET NUMBER 34 OF 54
89° 30' 00"



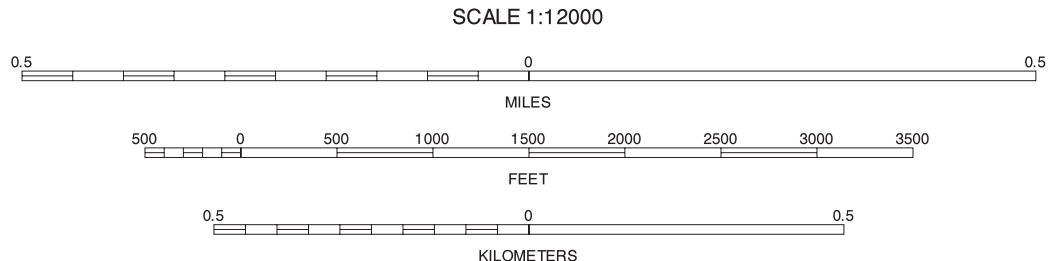


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION



25	26	27	25 DAKOTA SE
			26 DAVIS SW
			27 DAVIS SE
34		36	34 FREEPORT EAST NE
			35 RIDOTT NE
			43 FREEPORT EAST SE
43	44	45	44 RIDOTT SW
			45 RIDOTT SE

INDEX TO ADJOINING 3.75 MAPS

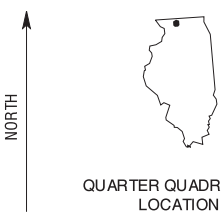
RIDOTT NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 35 OF 54

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.

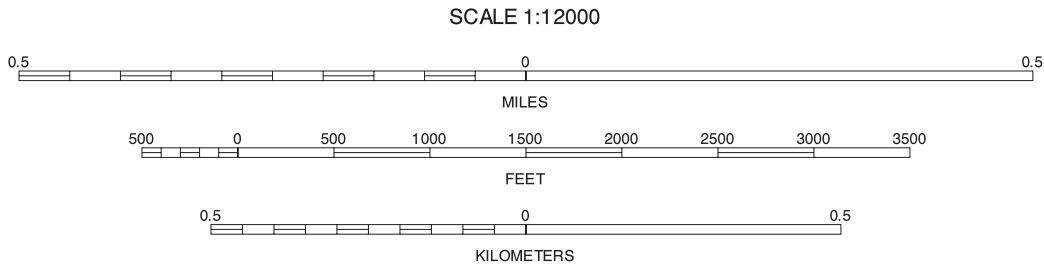


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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION

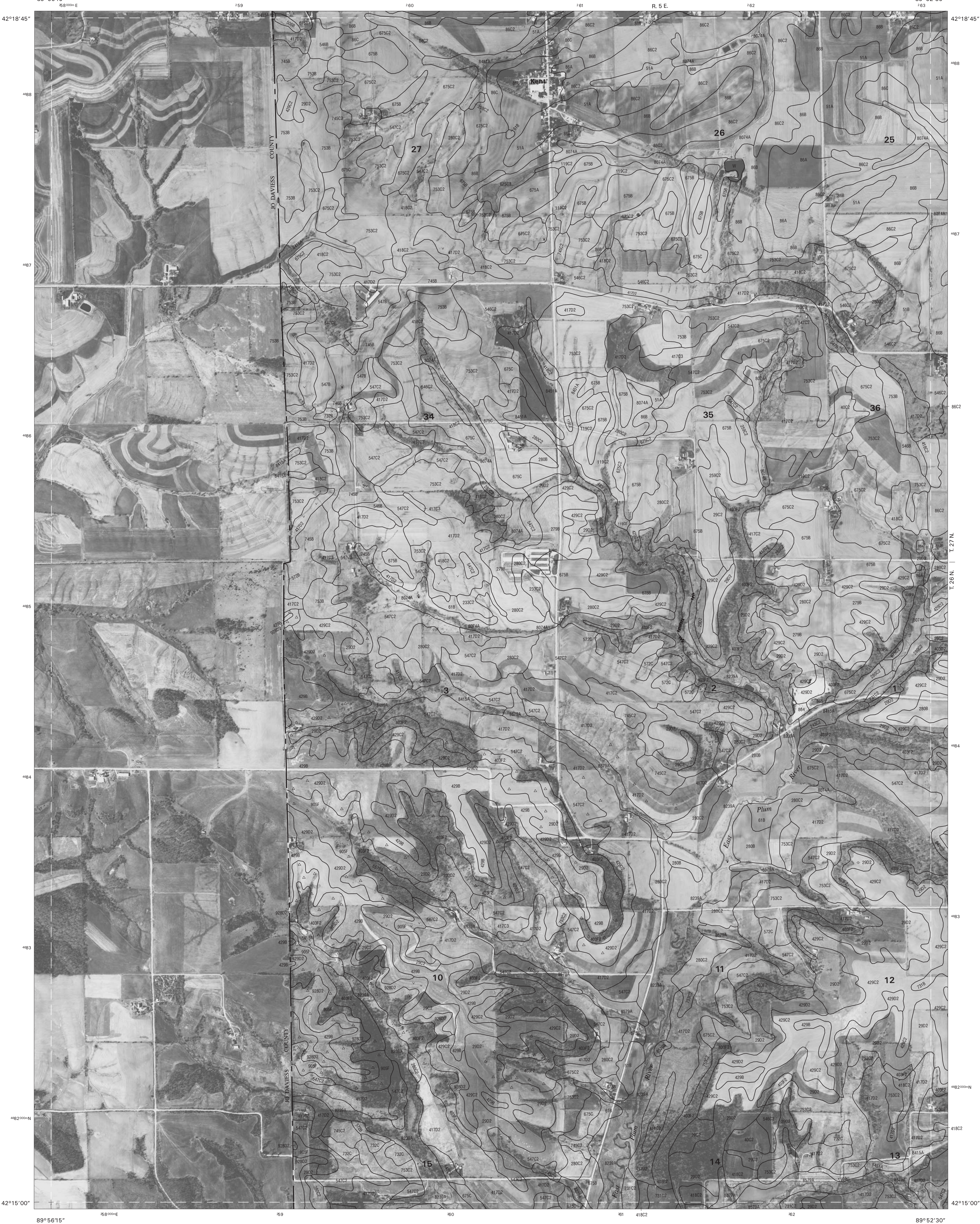


26	27	28 DAVIS SW 27 DAVIS SE
35		35 RIDOTT NW
44	45	44 RIDOTT SW 45 RIDOTT SE

INDEX TO ADJOINING 3.75 MAPS

RIDOTT NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 36 OF 54

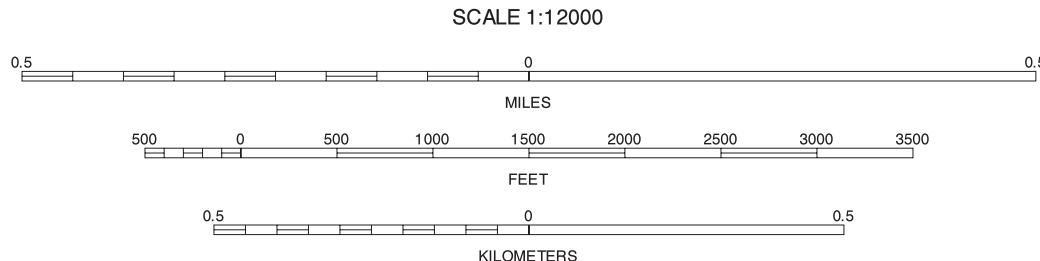
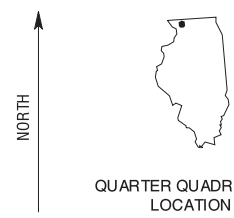
Soil map delineations extending beyond the dashed white quadrangle neartline are for reference only and are included on adjacent map sheets.





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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



28	29	30	28 KENT NE
37	38	39	29 PEARL CITY NW
46	47	48	30 PEARL CITY SE
			37 KENT SE
			38 PEARL CITY SE
			46 LORAN NE
			47 BOONE BRANCH NW
			48 BOONE BRANCH NE

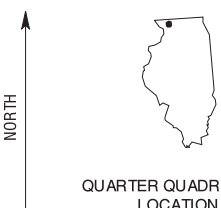
PEARL CITY SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 38 OF 54

Soil map delineations extending beyond the dashed white quadrangle neeline are for reference only and are included on adjacent map sheets.

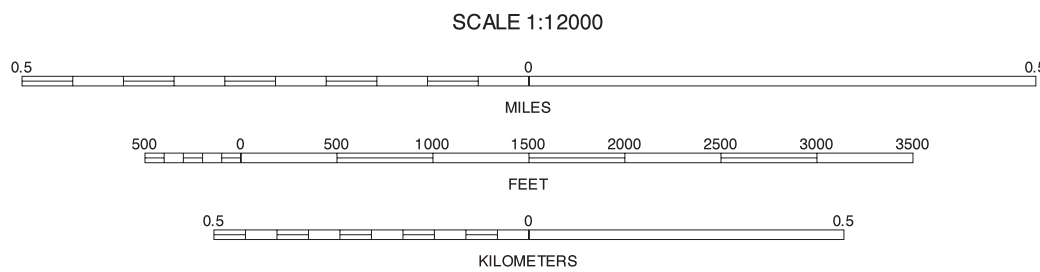


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

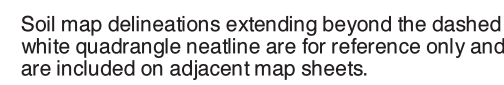


29	30	31
38	39	40
47	48	49

INDEX TO ADJOINING 3.75 MAPS

PEARL CITY SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 39 OF 54

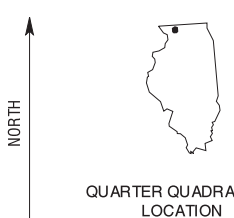
Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.



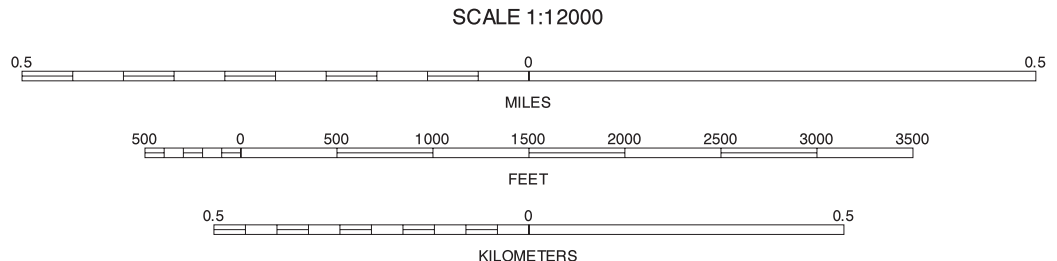


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North American Datum of 1983 (NAD83). GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION



31	32	33
40	42	
49	50	51

INDEX TO ADJOINING 3.75 MAPS

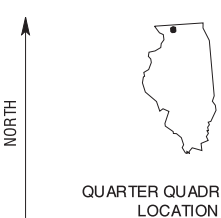
FREEPORT WEST SE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 41 OF 54

Soil map delineations extending beyond the dashed white quadrangle neoline are for reference only and are included on adjacent map sheets.

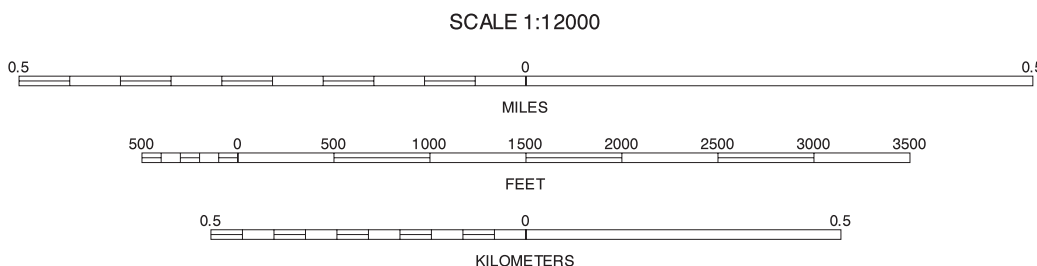


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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE LOCATION

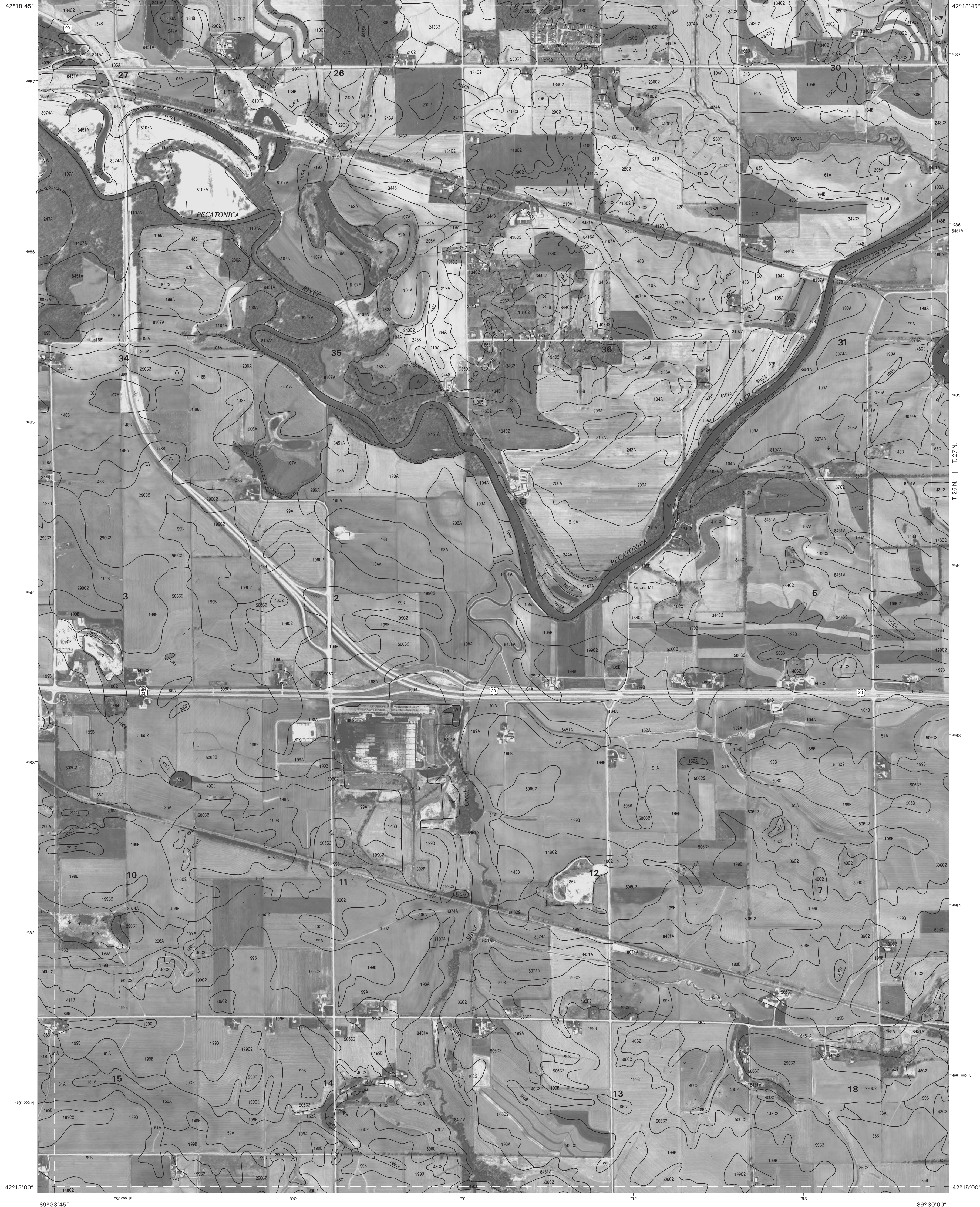


32	33	34	32 FREEPORT WEST NE 33 FREEPORT EAST NW 34 FREEPORT EAST NE
41		43	41 FREEPORT WEST SE 43 FREEPORT EAST SE 50 SHANNON NE
50	51	52	51 FORRESTON NORTH NW 52 FORRESTON NORTH NE

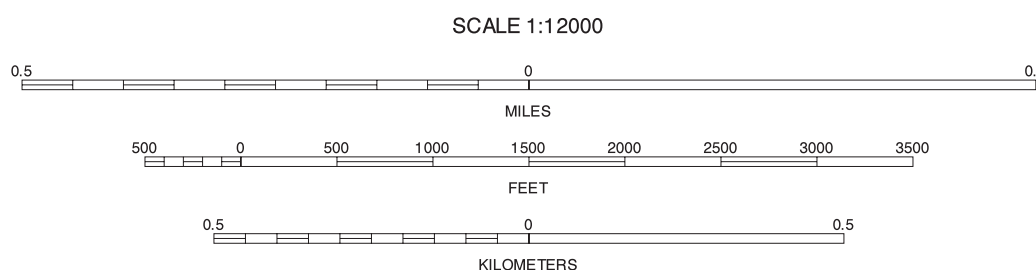
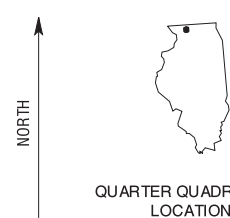
INDEX TO ADJOINING 3.75 MAPS

FREEPORT EAST SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 42 OF 54

Soil map delineations extending beyond the dashed white quadrangle neoline are for reference only and are included on adjacent map sheets.



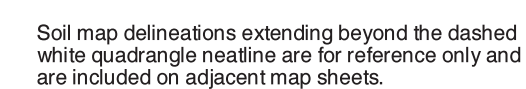
North American Datum of 1983 (NAD83). GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are
approximately positioned. Digital data are available for
this quadrangle.



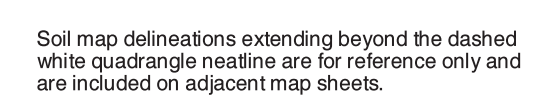
33	34	35	33 FREEPORT EAST NW 34 FREEPORT EAST NE 35 RIDOTT NW
42		44	42 FREEPORT EAST SW 44 RIDOTT SW 51 FORRESTON NORTH NW 52 FORRESTON NORTH NE 53 GERMAN VALLEY NW
51	52	53	

INDEX TO ADJOINING 3.75 MAPS

Soil map delineations extending beyond the dashed white quadrangle neatline are for reference only and are included on adjacent map sheets.



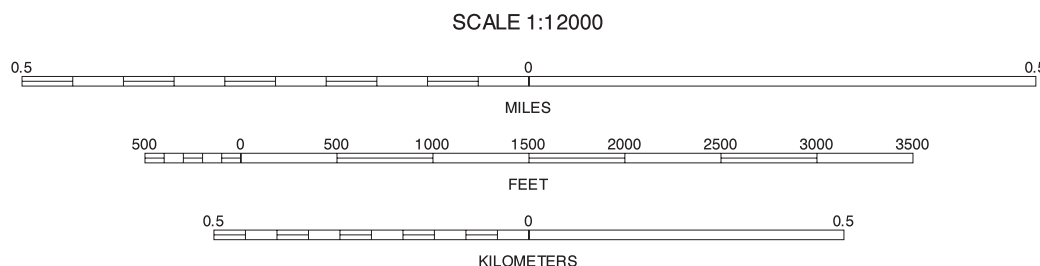
STEPHENSON COUNTY, ILLINOIS
RIDOTT SE QUADRANGLE
SHEET NUMBER 45 OF 54
89° 22' 30"





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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks; Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



37	38
37 KENT SE	38 PEARL CITY SW
47	47 BOONE BRANCH NW

INDEX TO ADJOINING 3.75 MAPS

LORAN NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 46 OF 54

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



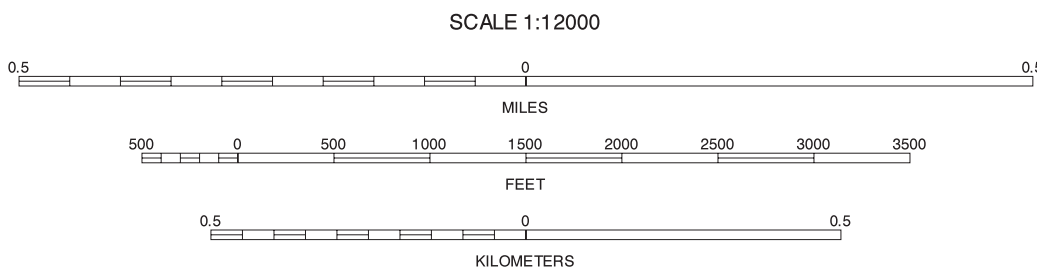
This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 2001 aerial photography.

North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

NORTH



QUARTER QUADRANGLE
LOCATION



37	38	39	37 KENT SE
			38 PEARL CITY SW
			39 PEARL CITY SE
46		48	46 LORAN NE
			48 BOONE BRANCH NE

INDEX TO ADJOINING 3.75 MAPS

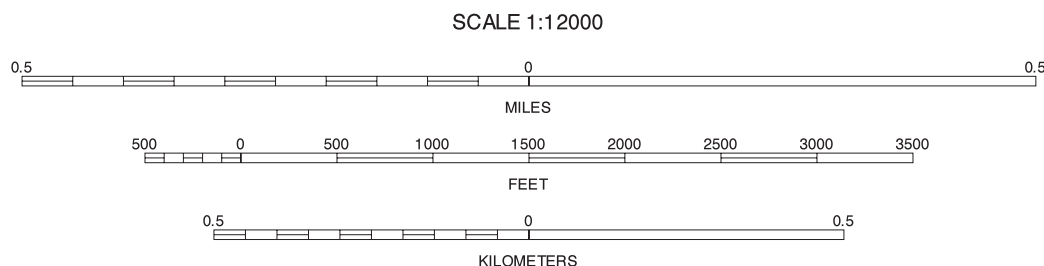
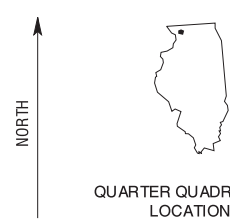
BOONE BRANCH NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 47 OF 54

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks; Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



38	39	40
47	48	49

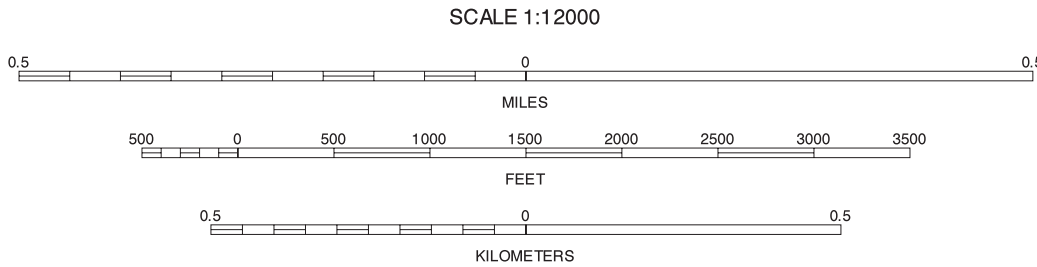
BOONE BRANCH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 48 OF 54

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



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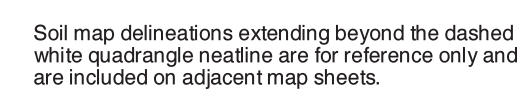
North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



39	40	41
48	49	50
51	52	53

SHANNON NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 49 OF 54

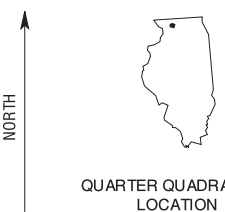
Soil map delineations extending beyond the dashed white quadrangle neoline are for reference only and are included on adjacent map sheets.



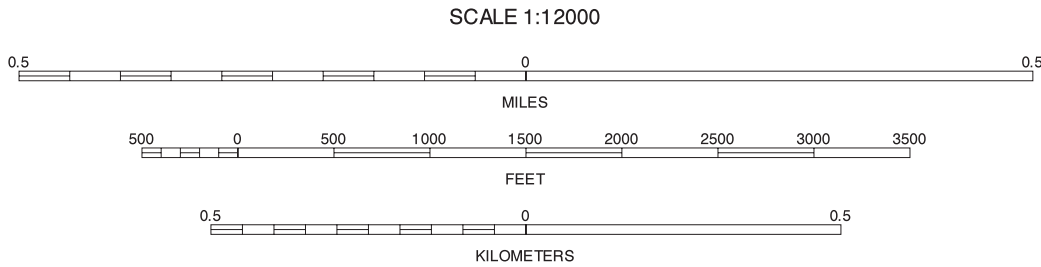


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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



QUARTER QUADRANGLE
LOCATION



41	42	43
50	51	52

41 FREEPORT WEST SE
42 FREEPORT EAST SW
43 FREEPORT EAST SE
50 SHANNON NE
51 FORRESTON NORTH NE
52 FORRESTON NORTH NW

INDEX TO ADJOINING 3.75 MAPS

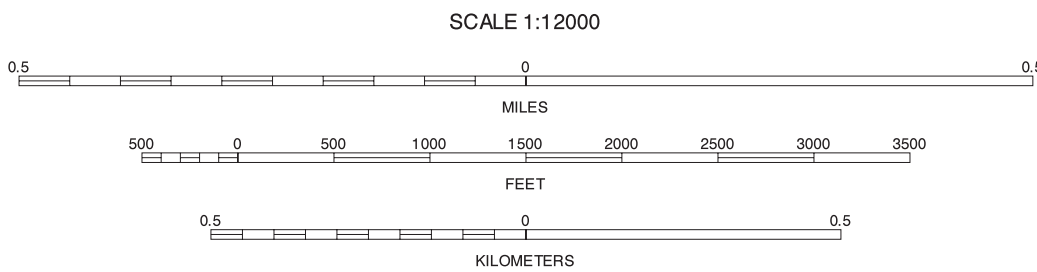
FORRESTON NORTH NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 51 OF 54

Soil map delineations extending beyond the dashed white quadrangle outline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.

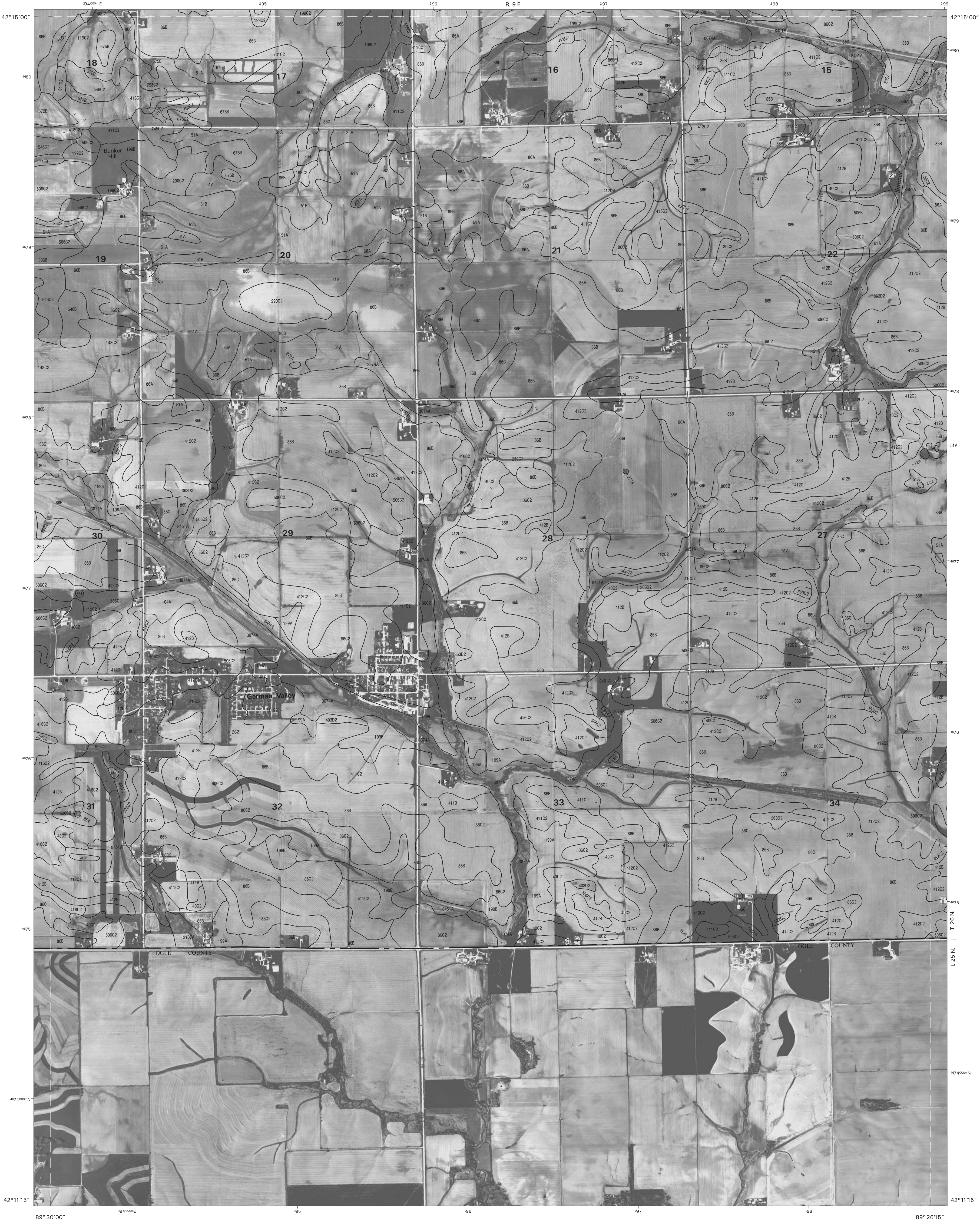


42	43	44
43	44	45
44	45	46

42 FREEPORT EAST SW
43 FREEPORT EAST SE
44 RIDOTT SW
51 FORRESTON NORTH NW
52 GERMAN VALLEY NW

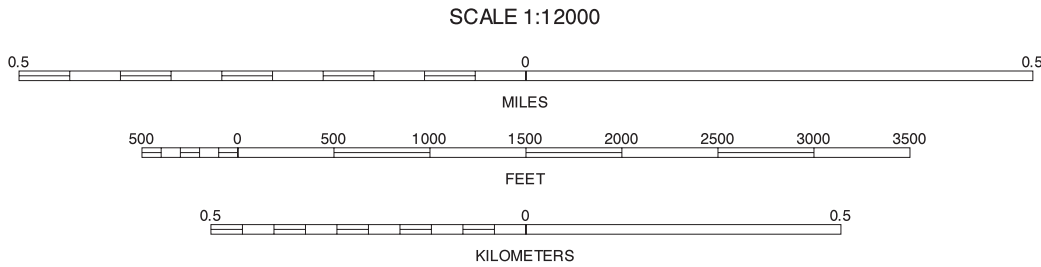
FORRESTON NORTH NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 52 OF 54

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.



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North American Datum of 1983 (NAD83), GRS-80 Spheroid
1000-meter ticks: Universal Transverse Mercator, zone 16.
Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



43	44	45
52	53	54

43 FREEPORT EAST SE
44 RIDOTT SW
45 RIDOTT SE
52 FORRESTON NORTH NE
54 GERMAN VALLEY NE

INDEX TO ADJOINING 3.75 MAPS

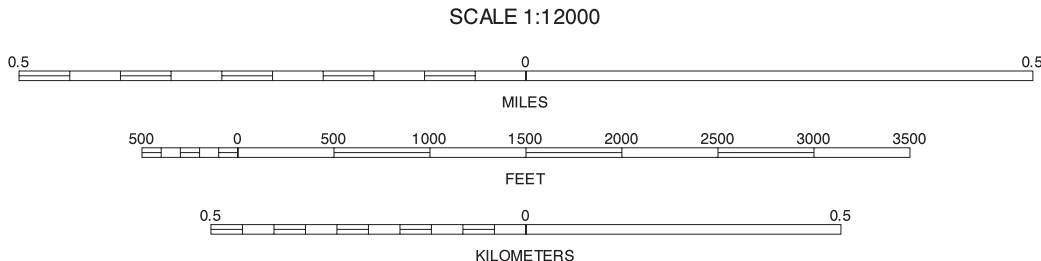
GERMAN VALLEY NW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 53 OF 54

Soil map delineations extending beyond the dashed white quadrangle nealline are for reference only and are included on adjacent map sheets.



This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 2001 aerial photography.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



44	45	44 RIDOTT SW 45 RIDOTT SE
53		53 GERMAN VALLEY NW

INDEX TO ADJOINING 3.75 MAPS

GERMAN VALLEY NE, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 54 OF 54

Soil map delineations extending beyond the dashed white quadrangle neckline are for reference only and are included on adjacent map sheets.